MONTHLY WEATHER REVIEW.

MAY, 1894.

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INTRODUCTION.

The REVIEW for May, 1894, is based on reports from 3,442 stations occupied by regular and voluntary observers. These reports are classified as follows: 153 reports from Weather Bureau stations; 41 reports from U. S. Army post surgeons; 2,324 monthly reports from State weather service and voluntary observers; 31 reports from Canadian stations; 222 reports through the Southern Pacific Railway Company; 588 marine reports through the co-operation of the Hydrographic Office, Navy Department, and "New York Herald Weather Service;" monthly reports from 35 U. S. Life-Saving stations; 48 reports from navigators on the Great Lakes; monthly reports from local services established in all States and Territories; and international simultaneous observations. Trustworthy newspaper extracts and special reports have also been used.

The WEATHER REVIEW for this month has been prepared under the general editorial supervision of Prof. Cleveland Abbe. The statistical tables are furnished by the Division of Records and Meteorological Data, in charge of Mr. A. J. Henry, acting chief of that division.

CHARACTERISTICS OF THE WEATHER FOR MAY, 1894.

The most prominent meteorological features of the month of May were the infrequency of areas of low pressure; the general high temperature in the Missouri Valley and northern slope and the low temperature on the Pacific coast; the special cold periods of the 19th, 20th, and 21st from the Missouri Valley to the Atlantic coast, and that of the 16th in California and Oregon; the large excess of rainfall in the middle Atlantic States and upper Lake region, and on the southern slope of the Rocky Mountains, viz, in eastern Colorado and central Texas; the large deficit of rainfall in the Missouri Valley, the east Gulf and west Gulf regions; the snowfall in Kentucky and Tennessee; the river floods in New York, Pennsylvania, and Washington.

ATMOSPHERIC PRESSURE.

[In inches and hundredths.]

The distribution of mean atmospheric pressure reduced to sea level, and as shown by mercurial barometers not reduced to standard gravity and as determined from observations taken daily at 8 a. m. and 8 p. m. (seventy-fifth meridian time), during May, 1894, is shown by isobars on Chart II. That portion of the reduction to standard gravity that depends on latitude is shown by the numbers printed on the right-hand border. This Chart also gives the so-called resultant wind directions for this month, based on the data given in Table IX of this REVIEW.

During the current month of May the pressures at sea level have been highest, 30.04, in the extreme western portion of the State of Washington and very nearly the same, 30.03, on the eastern coast of Florida, which two regions represent the borders of the areas of high pressure over the Pacific and Atlantic oceans, respectively. The regions of lowest pressure were in southern Arizona and California, the lowest being 29.78 at Yuma; the next lowest pressures were from 29.85 to 29.83 in eastern Montana and Alberta and western Saskatchewan and Assiniboia.

The normal distribution of atmospheric pressure and normal resultant wind direction for the month of May were approximately shown on Chart VI of the REVIEW for May, 1893, as computed by Prof. H. A. Hazen, and are not now reproduced. As compared with the normal for May, the mean pressure for the current month was in excess by 0.06 or less in Maine, the Maritime Provinces, and the Gulf of St. Lawrence, as also throughout a region extending from Texas to Washington, and eastward to Iowa and Manitoba. The principal deficits were in Oregon, California, and Arizona, as also throughout the Lake region, the middle and south Atlantic States. The largest deficit was 0.08 at Washington, Baltimore, and Roseburg, and the largest excess was 0.06, at Omaha, Port Arthur, and Anticosti Island.

As compared with the preceding month of April the mean pressure for May was slightly higher on the coast of Nova Scotia, in Oklahoma, Kansas, and the northern part of Alberta, but lower in all other districts. The greatest fall was about 0.15 in northern California, Nevada and Utah, and southern Oregon and Idaho.

The systematic periodic diurnal variations of pressure are shown by the hourly means given in Table VI.

AREAS OF HIGH AND LOW PRESSURE.

The following sections give some details as to the phenomena attending the individual areas of high and low pressure. The storm warnings officially issued either by the Weather Bureau through the general forecast official at Wash-

ington, or by the respective local forecast officials, are enumerated in connection with the respective areas of disturbance.

MOVEMENTS OF CENTERS.

The following table shows the date and location of each center of high or low pressure at the beginning and ending of its appearance on the U. S. Weather Maps, together with the average daily and hourly velocities. The monthly averages are given by paths and by hours.

Movements of centers of areas of high and low pressure.

Number.	First observed.			Last observed.			Path.		Average velocities.	
	Date.	Lat. N.	Long. W.	Date.	Lat. N.	Long. W.	Length.	Duration.	Daily.	Hourly.
High areas.		°	°		°	°	*Miles.*	*Days.*	*Miles.*	*Miles.*
I										
II										
III										
IV	1, a. m.	52	109	4, a. m.	45	59	2,700	3.0	900	37.5
V	9, a. m.	43	82	11, a. m.	44	61	1,150	2.0	575	44.0
VI	9, p. m.	46	116	12, p. m.	39	73	1,500	3.0	500	20.8
VII	12, a. m.	54	106	15, p. m.	43	78	1,900	3.5	543	22.4
VIII	17, p. m.	47	105	19, a. m.	49	96	1,000	1.5	667	27.8
IX										
X	22, p. m.	43	109	24, p. m.	39	102	400	2.0	200	8.3
XI	26, a. m.	53	105	29, a. m.	37	80	1,750	3.0	583	24.3
XII	30, a. m.	47	91	31, p. m.	42	103	700	1.5	467	19.5
Sums							11,000	19.5	4,435	
Mean of 8 paths									686	28.6
Mean of 19.5 days									657	27.4
Low areas.										
I	1, a. m.	45	92	2, p. m.	44	67	1,200	1.5	800	33.3
II										
III	2, p. m.	53	112	8, p. m.	56	62	2,400	7.0		34.3
IV	7, p. m.	52	115	10, a. m.	52	85	2,000	2.5	800	33.3
V	15, a. m.	46	106	21, a. m.	38	83	2,300	6.0	383	16.0
VI	13, a. m.	52	64	15, p. m.	49	53	650	2.5	260	10.8
VII	23, p. m.	36	80	26, a. m.	43	68	1,000	2.5	400	16.7
VIII	25, p. m.	50	129	29, a. m.	53	105	1,000	3.5	286	11.9
IX	26, a. m.	42	103	28, a. m.	47	78	1,250	2.0	625	26.0
X	28, a. m.	38	81	29, a. m.	42	72	650	1.0	650	26.3
XI										
XII	30, p. m.	32	78	31, p. m.	42	70	600	1.0	600	24.2
Sums							13,050	29.5	4,804	
Mean of 10 paths									480	20.0
Mean of 29.5 days									442	18.4

HIGH AREAS.

I.—This number is given to the area of high pressure that prevails in the tropical portions of the Atlantic Ocean. When this area advances westward so far that its western portion covers the south Atlantic States there prevail steady northeast winds and clear weather in that region near the coast, but southeast winds and clear weather in the interior and southerly winds with clear or hazy weather in the middle Atlantic States. These conditions continued in the south Atlantic States from the 1st to the 4th, the highest pressure being 30.40 on the 1st, a. m., at Wilmington, and 30.14 at Key West, from which readings the pressure diminished steadily until the 5th, a. m., when it was 30.12 at Wilmington and 30.08 at Key West.

These westerly extensions usually result from the southward movement of high pressures along the Atlantic coast or the southeastward movement of areas of clear, dry, cold air and high pressure over the interior of the continent; in either case the high area over the Atlantic receives an addition on its western side, by reason of which the isobars over the Atlantic are extended westward as though the tropical area of high pressure had moved in that direction. The above-mentioned charts of the 1st to the 4th, as also those of the 11th to the 13th, present illustrations of this formation.

II.—This number is given to the area of high pressure on the Pacific Ocean whose eastward extension brings high pressure, northerly winds, and cold, dry weather to the Pacific States, especially when the region of highest pressure lies to the north of latitude 40°. Illustrations of this action occurred on the 1st and 2d, when the maximum pressure on the coast was 30.42 at Portland, Oreg.; from the 7th to the 10th, when the maximum pressure was 30.46 at Portland, Oreg.; from the 15th to the 18th, when the maximum pressure was 30.20 at San Francisco, on the 15th, and at Portland, Oreg., on the 16th.

The following numbers refer to high areas that were, during at least a portion of their history, wholly within the area of our maps.

III.—This was central in Colorado on the 1st, a. m., and was a branch of high area No. XI from the series for April. It disappeared during the 1st, while the original area of high pressure continued off the Pacific coast, as stated in the above paragraph referring to high area No. II.

IV.—This area appeared on the 1st, a. m., in Saskatchewan and slowly advanced southward; it passed north of Lake Superior on the 2d, and southeastward over the middle Atlantic States on the 3d, where it joined the high pressure of the Atlantic and gave the maximum pressure, 30.40, at Cape Breton on the 4th, a. m.

V.—This began with rising pressure on the 8th over the upper lakes and Ohio Valley; on the 9th, a. m., the highest pressure was central over Ohio and Lake Huron; 9th, p. m., in western New York; 10th, a. m., in the St. Lawrence Valley; 10th, p. m., the Bay of Fundy; 11th, a. m., off the coast of Nova Scotia.

VI.—This began on the 9th, p. m., as an offshoot from the high pressure No. II which was then off the coast of Oregon. The central highest pressure was then in Idaho; it moved southeast to Kansas, thence eastward over Illinois, the lower Lake region, the middle Atlantic States and disappeared on the 12th off the middle Atlantic coast, where it joined high area No. I, as above explained.

VII.—On the 12th the barometer rose in Saskatchewan and the central highest pressure moved southeastward over Manitoba and Lake Superior, and disappeared over the lower Lake region on the 15th.

VIII.—This appeared on the 17th as an offshoot from high area No. VII, reinforced by the flow of air from the northward over Saskatchewan and Athabasca. On the 17th, p. m., pressure was highest in Montana, but on the 18th, a. m., in Manitoba; evidently the flow of cold air from the British Possessions had a preponderating influence in the formation of this high area. On the 18th, p. m., it extended as a ridge from Nebraska northeast to Hudson Bay, and the 19th, a. m., stretched still further south into Texas, while the central highest pressure in Minnesota remained unchanged. During the next twenty-four hours pressure diminished, but the ridge, as such, remained, with but slight change. During the next few days pressure rose in the Canadian Provinces from the Atlantic to the Pacific, and a general area of high pressure seems to have descended and spread eastward and westward over this region. High area No. VIII became gradually transformed and obliterated without any special movement of its center. In connection with high area No. VIII, special warnings were issued as follows: 19th, 11 a. m., frost warnings for Ohio and West Virginia.

IX.—On the 19th pressure rose over the Gulf of St. Lawrence and Maritime Provinces, and was highest on the 20th, p. m., 30.50, at Chatham, after which this area gradually diminished in pressure without any special movement. The steady northeasterly winds over the Middle States, New England, the Maritime Provinces, and St. Lawrence Valley indicate that we have here to do with cold air flowing southward over Labrador and neighboring regions, and deflected toward the southwest by the presence of low pressure in the Ohio Valley, the Lake region, and Atlantic States; the resistance offered to the movement of this air by the land surface

caused it to accumulate and by so doing increase the barometric pressure to the degree indicated by the high pressure at Chatham. Similarly the flow of air southward over Hudson Bay must have been followed by an accumulation and a high pressure in the regions to the southward, as is often shown by the observations in Manitoba, the Lake region, and St. Lawrence Valley. The general high pressure prevailing in these regions from the 20th to the 23d is thus the result of the effort of the northerly winds to flow southward toward the low pressure in the Ohio Valley and the Atlantic States.

X.—On the 22d pressure rose over the Rocky Mountain plateau region, possibly in continuation of the rising pressure that had been prevailing from the northward. By the 24th, p. m., pressure had diminished to normal values, or below, at the Rocky Mountain plateau stations and high area No. X had no further movement.

XI.—On the 26th, a. m., pressure rose in Saskatchewan and the central highest pressure moved slowly southeastward, reaching Iowa by the 28th, a. m., and western Virginia the 29th, a. m., after which it entirely disappeared.

In connection with high area No. XI, special warnings were issued as follows: 27th, 10.30 a. m., frost warnings to Milwaukee and Detroit for Wisconsin and lower Michigan; 28th, 10.30 a. m., frost warnings to Cincinnati, Columbus, Sandusky, Cleveland, and Parkersburg; 28th, 12 m., frost warnings to Buffalo, Rochester, Oswego, Indianapolis, Detroit, Louisville, Pittsburg, and Toledo.

XII.—On the 30th, a. m., pressure was highest in Minnesota, and during the next twenty-four hours this area spread southward, but the center moved westward across Minnesota and by the 31st, p. m., it was in western Nebraska. This western movement was undoubtedly in response to the development of the trough of low pressure that was then extending from British Columbia to the head of the Gulf of California.

LOW AREAS.

I.—This was a continuation of No. XVII of April, and on the 1st, a. m., extended from Iowa northeastward over Lake Superior, while an extensive area of high pressure was advancing over the Pacific coast and Rocky Mountain region. On the 1st, p. m., this low area was apparently central in the Lake region, with high winds and rain, but by the 2d, a. m., it had entirely disappeared and, although the lowest pressure was now central at the mouth of the St. Lawrence, it does not seem proper to consider that there had been any such rapid northeastward movement; on the contrary, it is more probable that the low area of the 1st was but the southern end of a long trough that rapidly filled up. This southern end reappeared on the 2d, p. m., as a storm center in the Bay of Fundy while pressure had risen over the Lake region. This series of depressions in Wisconsin, the St. Lawrence, and the Bay of Fundy have every appearance of having been caused by fleeting disturbances in the upper atmosphere that made themselves felt temporarily at the earth's surface; they represent a portion of a series of disturbances that extended from the tropical Pacific northeastward over Lower California, Mexico, the southern plateau, and the Lake region, forming a broad depression between the high pressures of the Atlantic and Pacific.

In connection with low area No. I, signals for high winds were ordered as follows: 1st, 2.05 p. m., cautionary southeast at Marquette and Saginaw Bay section; 1st, 8 p. m., cautionary northwest, Sault Ste. Marie; 2d, 11 p. m., cautionary southeast, Chicago, Milwaukee, and Green Bay; 3d, 8 a. m., cautionary southeast, Sault Ste. Marie; 3d, 11.20 a. m., cautionary southeast, Marquette.

In connection with the same area special warnings were issued as follows: 2d, 10.40 a. m., severe local storms, to observers in Kansas; 2d, 10.50 p. m., severe local storms, to observers in Springfield, Ill., Cairo, Columbus, Mo., Springfield, Mo., Sioux City, Dubuque, Davenport, and Keokuk.

II.—This number is given to the area of low pressure that frequently extended northeastward from the Pacific over Arizona; its sudden appearance on the 1st, p. m., as on many other occasions, seems, at first thought, to be in part an illusion resulting from the methods of reduction of high stations to sea level, but the fact that the winds and the areas of high pressure immediately moved in toward this depression shows that a low pressure was actually present. The cold northerly wind on the west side of the trough and the warm southerly on the east side exaggerate the slight pressure gradient from which they originated in the manner so clearly explained by Peslin (Smithsonian Report, 1877, p. 465). The center of this trough is probably south and west of Yuma, but that station usually shows the lowest pressure within this trough, as far as shown by the U. S. Weather Maps. The location of low area No. II is, therefore, placed at Yuma, and the lowest pressures at that station occurred on the 2d, a. m., 29.72; 5th, p. m., 29.76; 6th, p. m., 29.70; 8th, p. m., 29.62; 9th, p. m., 29.60; 11th, p. m., 29.78; 14th, p. m., 29.76; 17th, p. m., 29.76; 18th, p. m., 29.74.

The numerous barometric oscillations at Yuma have an intimate correlation with those in Washington and British Columbia. When the high area on the Pacific moves bodily westward the pressure falls on the western slope from Vancouver Island to the Gulf of California, and the fall of pressure takes place either simultaneously at the north and the south, or first at the northern, or first at the southern region, according as the high area retreats westward more or less symmetrically with reference to the Pacific coast. Such oscillations occur both in winter and summer, but in the former the eastward movement, with the accompanying rise of pressure on the Pacific coast, combines with the local rise of pressures due to low temperatures over the Rocky Mountain plateau, while in the summer time the westward movement and the resulting fall of pressure on the Pacific coast combine with the low pressure due to the high temperatures; the result is that the high pressures during winter and the low pressures during summer constitute the most prominent phenomena and tend to attract special attention.

III.—Pressure was lowest at Edmonton on the 2d, p. m., with westerly winds, and the center of this depression was probably further north. The maps of the 4th and 5th show a steadily increasing area of low pressure extending from this region south and east and, undoubtedly, also extending further north; finally the southern end of this extensive area was, on the 6th, p. m., central near Lake Superior, and by the 8th, p. m., it was central in southern Labrador, the greater part of the depression being far north of our weather maps and moving nearly due eastward.

In connection with low area No. III signals for high winds were ordered as follows: 5th, 9.55 a. m., cautionary southwest, Detroit and Saginaw Bay section; 5th, 11.10 a. m., cautionary southeast, lakes Michigan and Superior (except Duluth and Ashland section), Alpena, and Red Wing; 5th, 11.10 a. m., cautionary northeast, Duluth and Ashland section; 5th, 1.50 p. m., cautionary southeast, Port Huron, Toledo, Sandusky, and Cleveland; 5th, 10.50 p. m., cautionary southwest, Erie to Oswego and section; 5th, 10.50 p. m., change to southwest at Port Huron, Toledo, Sandusky, and Cleveland; 5th, 11.00 p. m., storm southeast from Breakwater to Boston and section; 6th, 9.50 a. m., change to cautionary southwest at Red Wing, lakes Superior and Michigan, and Alpena; 6th, 9.50 a. m., continue cautionary southwest at Detroit and Saginaw Bay section; 6th, 10.40 a. m., storm southeast at Portland and Eastport; 6th, 11.30 a. m., storm southwest at Baltimore, Norfolk and section, Fort Monroe, and West Point; 6th, 9.50 p. m., change to cautionary northwest at lakes Superior,

Michigan, and Huron, and Red Wing and Detroit; 6th, 9.50 p. m., continue cautionary southwest from Toledo to Oswego; 6th, 9.50 p. m., change to storm southwest from Breakwater to Boston and section.

IV.—This depression appeared on the 7th, p. m., in Alberta, pressure being lowest at Calgary. The depression extended southeastward over the Rocky Mountain plateau, and by the 8th, p. m., was central in northwest Nebraska, while pressure was equally low at Yuma. On the 9th, p. m., the northern depression was north of Lake Superior, but a trough extended thence south-southwest into Texas, and high area No. VI was central in Idaho. The low pressure now moved northeastward beyond our stations.

In connection with low area No. IV signals for high winds were ordered as follows: 7th, 9 a. m., change to storm southwest at Alpena; 8th, 10 a. m., cautionary northwest at Sault Ste. Marie; 9th, 9.40 a. m., cautionary southeast at Milwaukee and section, Green Bay and Ashland sections, and Houghton section; 9th, 10.30 a. m., cautionary southeast at Red Wing and Lake Michigan, except Milwaukee and section; 9th, 11 a. m., cautionary northeast at Duluth, Marquette, and Sault Ste. Marie; 10th, 9.45 a. m., cautionary southwest at Detroit and Saginaw Bay section; 10th, 10.30 a. m., change to cautionary northwest, Lake Michigan, Alpena, Sault Ste. Marie, Marquette, and Houghton section; 10th, 10.40 p. m., cautionary southwest from Toledo to Oswego; 11th, 9.40 a. m., cautionary southeast, Ashland section; 11th, 11 a. m., cautionary southeast at Red Wing; 11th, 11 a. m., cautionary southwest from Alpena to Duluth, except Ashland section; 11th, 5 p. m., change to cautionary southeast at Alpena.

V.—On the 11th, a. m., pressure was falling from the Gulf of California northward into Canada, and this condition continued until an extensive depression covered the Rocky Mountain plateau and northern slope, slowly developing until, on the 15th, a. m., it may be described as a well-marked area of low pressure with its center in southeastern Montana. By this time pressure had begun to rise on the Pacific coast, and an area of high pressure had also descended southward from Hudson Bay to the lower Lake region, where it was central on the 15th, p. m. While low No. V thus slowly developed over the Rocky Mountain region another depression, low No. VI, was moving northward on the Atlantic, and by the 15th, p. m., was central near Newfoundland and Cape Breton. The descent of high area No. VIII, from Hudson Bay, will, by some, be considered as a mechanical result of the interference of the two systems of upper and lower currents circulating about low No. V and low No. VI, but this elementary theory will explain but a small part of the complex phenomena that attended the formation and movement of these areas of low pressure. Area No. V began its eastward movement on the 15th, and by the 16th, p. m., had reached the eastern limit of South Dakota; by the 17th, p. m., it was central at the southern end of Lake Michigan, and northerly gales prevailed in the upper Lake region. It now began to expand as a long oval, turning northeast and southwest, and by the 18th, a. m., the isobar of 29.55 included lakes Erie and Ontario. By the 18th, p. m., pressure had fallen throughout the Atlantic coast region, while increasing northerly gales prevailed over the Lake region; the area of lowest pressure included three or more centers and systems of whirling winds, respectively, in eastern Ohio, eastern Pennsylvania, and southeastern Virginia. By the 19th, a. m., the center of the barometric depression and the cyclonic system of winds was in the southeastern portion of West Virginia, and the 19th, p. m., it was in the eastern portion of North Carolina. This rapid motion southward was evidently due to the influence of the Allegheny Mountains, and is paralleled by the influence of the Rocky Mountains on the movements of low areas in their neighborhood across that range. During the 20th the winds diminished in the interior and barometric pressure gradually rose until, by the 21st, p. m., this disturbance had disappeared without any further eastward motion. During the four days from the 17th to the 21st, high area No. VIII had extended eastward over the Canadian Provinces, and by the 21st, a. m., covered the region north of the Lakes and New England. But it is evident that some condition favorable to the perpetuation of low No. V was absent and the movement of the cold air southward not only filled up this depression, but counteracted the tendency to the formation of others until the 23d, p. m., when a feeble depression, No. VII, began to form in Virginia.

In connection with low area No. V signals for high winds were ordered as follows: 13th, 9.40 a. m., cautionary northeast at Duluth; 14th, 8 a. m., cautionary southeast at Alpena; 14th, 11.05 a. m., cautionary southeast at Marquette and Sault Ste. Marie; 15th, 4.18 p. m., cautionary southeast, Lake Michigan; 15th, 10.30 p. m., cautionary northeast on Lake Superior, Red Wing, and Alpena; 15th, 10.30 p. m., cautionary southeast on Lake Erie and at Saginaw Bay section and Port Huron; 16th, 10.40 a. m., cautionary southeast on Lake Ontario; 16th, 4.30 p. m., continue cautionary southeast on Lake Michigan; 16th, 11 p. m., change to cautionary southeast on Lake Superior, at Red Wing, and Alpena; 17th, 9.40 a. m., change to cautionary northeast at Ashland section; 17th, 9.50 a. m., change to cautionary northeast at Duluth; 17th, 10.50 a. m., cautionary southeast, Saginaw Bay section, Port Huron, and Lake Erie; 17th, 11.15 a. m., cautionary southeast at Milwaukee, Green Bay and section; 17th, 5.35 p. m., storm northeast at Port Huron; 17th, 8 p. m., cautionary northwest at Alpena; 17th, 8 p. m., cautionary northeast at Sault Ste. Marie; 17th, 10.10 p. m., cautionary southeast on Lake Ontario; 17th, 10.10 p. m., storm northwest on Lake Michigan; 18th, 8 a. m., cautionary northwest at Marquette; 18th, 9.20 a. m., cautionary northwest, Ashland section and Houghton section; 18th, 9.50 a. m., storm northwest at Alpena; 18th, 11 a. m., change to storm northwest, Lake Erie and Saginaw Bay section; 18th, 9.35 p. m., continue storm northwest on Lake Michigan; 18th, 9.38 p. m., continue cautionary northeast at Sault Ste. Marie; 18th, 10 p. m., change to northwest at Port Huron; 18th, 10.10 p. m., change to cautionary northeast on Lake Ontario; 18th, 10.30 p. m., storm northeast from Sandy Hook to Eastport; 19th, 9.44 a. m., change to cautionary northwest, Milwaukee and Green Bay section; 20th, 10 a. m., cautionary northeast, all lakes, except at Duluth and Ashland section; 20th, 10.40 a. m., storm northeast at Eastport and Portland; 20th, 10.10 p. m., continue signals from Breakwater to Boston and section; 21st, 9.40 a. m., continue cautionary northeast at Milwaukee and section, Green Bay and Houghton sections; 21st, 10.20 a. m., continue cautionary northeast at Sault Ste. Marie and Marquette and on lakes Ontario, Erie, Huron, and Michigan, except Milwaukee and section; 21st, 10.20 a. m., cautionary northeast at Grand Haven.

In connection with the same area special warnings were issued as follows: 15th, 11.15 p. m., severe local storms, to States of the middle and lower Missouri Valley and western Illinois; 16th, 11 a. m., severe local storms, to Chicago, Cairo, Keokuk, Indianapolis, Des Moines, Kansas City, Columbia, St. Louis, and Dubuque; 17th, 11 a. m., severe squalls on Lakes and local storms, to Alpena, Grand Haven, Milwaukee, Chicago, Detroit, Davenport, Dubuque, and Port Huron; 18th, severe gales indicated on the coast Saturday, to Secretary Maritime Exchange in New York and Philadelphia.

VI.—This depression first appeared on the 13th, a. m., in the northern portion of New Brunswick and its early history is unknown, although it was apparently then moving southeastward and was central in Labrador. On the 14th, a. m., it was apparently north of Newfoundland, but the pressure con-

tinued falling in Newfoundland, New Brunswick, and Nova Scotia, until the 15th, p. m. The history of this low area belongs to the North Atlantic meteorology.

VII.—Although this area is charted as beginning on the 23d, p. m., in Virginia, yet there was a previous history that may plausibly, at some time hereafter, be shown to have had an intimate bearing upon its development. On the 18th pressure was low from the Gulf of California to Washington, and on the 19th a special depression appeared in British Columbia; this extended southeastward, diffusing itself over a large area without filling up; on the 21st, a. m., it was central in Wyoming, and on the 22d, p. m., a depression appeared extending from Arizona to Texas, which by the 23d, p. m., had extended its influence eastward into Louisiana and northeastward toward Virginia. On the 23d, p. m., the upper atmosphere contributed a falling pressure over the middle and south Atlantic States, while the lower atmosphere contributed rain and cloud over these States and the Lake region; this combination was favorable to the formation of a special cyclonic depression, No VII, central in southern Virginia on the 23d, p. m. The central barometric pressure fell steadily until the 25th, a. m., when it was central in southern New Hampshire; high winds prevailed on the 24th on the New England coast. The cyclonic system was partly broken up on the 25th as the center moved eastward and disappeared south of Nova Scotia.

In connection with low area No. VII signals for high winds were ordered as follows: 24th, 10.30 p. m., storm northeast from Narragansett section to Portland; 25th, 10.30 a. m., storm northeast at Eastport; 25th, 8.40 a. m., cautionary southwest Woods Holl section.

VIII.—The quiet condition of the atmosphere during the first part of May over the United States was not seriously disturbed until the 25th, on which day a trough of low pressure suddenly extended from British Columbia southward to the Gulf of California, and heavy southerly winds, with rain, prevailed in northern California. This great change can only be attributed to a sudden change in the movements and pressures in the layer of air high above the western slope of the Rocky Mountains which, apparently, suddenly acquired a rapid motion from the southeast, and the area of rain moved northward, reaching Montana by the 26th, p. m., at which time the lowest pressure was central in British Columbia. This depression moved slowly eastward and disappeared on the 29th, a. m., in Saskatchewan.

IX and X.—On the 26th, a. m., a slight depression is charted in South Dakota as an eastern branch of the large area connected with No. VIII. This depression moved eastward into Iowa, where it really constituted a trough between the cold northerly and warm southerly winds. On the 27th it moved further east over Lake Huron, preserving the same trough-like character; this original trough disappeared on the 28th in Ontario, but a second trough, No. X, formed on the 28th, a. m., in West Virginia, which moved northeastward over New Jersey and disappeared in eastern Massachusetts on the 29th, a. m.

In connection with low area No. IX, signals for high winds were ordered as follows: 27th, 10 a. m., cautionary northwest at Chicago, Grand Haven, and Mackinaw sections; 27th, 5 p. m., cautionary northwest at Sault Ste. Marie; 11.10 p. m., cautionary northwest at Alpena.

XI.—On the 30th pressure again fell, as in the previous case, from the Gulf of California to British Columbia, but was lowest in Idaho, so that neither wind nor rain on the California coast was notably severe. By the 31st, p. m., a distinct narrow trough of low pressure extended from Yuma to Edmonton, the further history of which belongs to the month of June.

XII.—On the 30th pressure rose over the Lake region but fell in the south and middle Atlantic States, so that by the 30th, p. m., a moderate depression was near Lynchburg; this moved slowly northeastward over New Jersey and Cape Cod, with steadily increasing winds and falling pressure, constituting a severe local storm, whose subsequent history belongs to June.

In connection with low area No. XII, signals for high winds were ordered as follows: 31st, 9.40 a. m., storm northeast from Sandy Hook to Boston and section; 31st, 11.10 a. m., storm at Portland, Me.; 31st, 10.50 p. m., storm northeast at Eastport.

NORTH ATLANTIC METEOROLOGY.

[*Pressure in inches and millimeters; wind-force by Beaufort scale.*]

The normal barometric pressure for May over the North Atlantic Ocean, as deduced from international simultaneous meteorological observations taken at Greenwich noon, and not reduced to standard gravity, is highest, 30.20 to 30.22 (767 to 768), in a small oval between N. 26° and N. 35°, and W. 27° and W. 34°; a corresponding region of high pressure exists over the Pacific Ocean in N. 20° to N. 40°, and west of W. 130°. The region of lowest pressure, 29.85 (758), over the North Atlantic Ocean is an oval that includes Iceland, Jan Mayen, and Bären Island and touches North Cape on the east and Greenland on the west; the lowest pressure in the Pacific Ocean, 29.70 (755), extends from Kamchatka eastward through the Aleutian Islands. The isobars of the Northern Hemisphere for May show a decided diminution in the pressure over the northern portion of North America up to the Arctic circle and beyond.

As compared with April the normal pressures in May are lower throughout the United States, the Hudson Bay region, northern Greenland, the whole of Asia, and the western portion of the Pacific; the pressures are higher over the Atlantic Ocean and Europe, as also over the central Pacific and eastward into the British Possessions. There is evidently a continued tendency to the formation of a trough of low pressure extending from the north pole southward over Hudson Bay and southwest over the Gulf of California, dividing the areas of rising pressure over the Atlantic and Pacific.

The normal zone of maximum frequency of paths of storm centers passes from China, at N. 30°, northeast through Japan and Bering Sea to N. 56°, W. 156°; thence southeast into Utah and Colorado at N. 42°, W. 100°; thence northeast over the Lake region and Newfoundland, the Atlantic, and either north of Scotland to the coast of Norway at N. 60°, E. 10°, or else southeastward into Europe, reaching N. 45°, E. 20°. The maximum number of storm centers passing over any quadrilateral of 5° in latitude and longitude is 3.4 annually in the region between the Lakes and the mouth of the St. Lawrence; a corresponding maximum of 2.2 occurs in the neighborhood of Scotland, and one of 2.3 in southern Japan.

The normal rate of progress of storm centers during May is 25 miles per hour in the United States, 16 miles over the Atlantic, 18 miles in Europe, 24 miles in the China and Japan seas, and 20 miles in Bering Sea.

In general it will be noticed that the storms that continue as cyclonic whirls for any length of time in the Northern Hemisphere have areas of predominating high pressure on

their western side, and that in fact they generally originate when such areas of high pressure send a steady flow of air southward into extensive regions where the pressure is a little below the normal; in such cases the influence of the rotation of the earth is favorable to the formation and continuation of cyclonic whirls; the same may be said of areas of high pressure that push northward on the eastern end of a general depression. On the other hand when a high pressure on the north is pushing south and west at the eastern end of a general depression, the conditions are not favorable for the perpetuation and development of cyclonic whirls. Inasmuch as these high areas represent overflowing and descending air from the upper layers of the general circulation of the atmosphere, therefore, the paths of the centers of cyclones represent in general the region to which this general circulation extends; thus, over the Pacific Ocean where the general circulation is more important than the continental circulation, these paths are furthest from the equator; over the North Atlantic they extend rather less toward the north, but over North America, and especially over Asia, they extend still less away from the equator, showing that the so-called general circulation of the Northern Hemisphere, or the ideal circulation that would prevail over a globe of uniform ocean, is almost entirely broken up. This, which is partly true in the winter time, is peculiarly so as the summer advances until in July the circulation of the air and the paths of the storms are grouped about the continents and the oceans more decidedly than about the north pole and the equator.

NORTH ATLANTIC STORMS.

The following paragraphs give some account of the areas of low pressure and strong winds on the Atlantic Ocean during May, 1894. Daily charts are compiled at the Weather Bureau showing the atmospheric conditions over the United States, Europe, and the Atlantic Ocean, as nearly as practicable at Greenwich noon, and afford a basis for approximating the locations and paths of the more important areas of high and low pressure.

A. This was apparently a continuation of *G* of the North Atlantic series for April; it appears to have passed far north of our reports during April 30 and May 1 and 2, while an area of high pressure, 30.75, was central on the 1st at N. 48°, W. 23°. On the 3d, noon, *A* was central at N. 64°, longitude 0; 4th, noon, N. 59°, W. 4°, and subordinate centers were developing in southern Europe; 5th, noon, N. 57°, E. 12°, with another center in Italy. By this time pressure had also fallen decidedly over the Atlantic and the northern portion of North America, so that by the 6th, noon, *A* had partially filled up and appeared as a minor feature on the eastern side of the great depression that then prevailed between Great Britain, Norway, and Labrador.

B, C, and *D.* On the 1st a depression prevailed over the Rocky Mountain and Lake regions that was probably only a portion of an extensive trough trending northeastward toward Greenland; on the 2d the southern end of this trough was central over Labrador and Baffins Bay, and on the 3d it extended from N. 40°, W. 65°, northeastward toward Iceland; 5th, noon, areas *B* and *A* had apparently joined and by the 6th, noon, the isobar of 29.5 covered the entire area between Sweden on the east and Manitoba on the west. This western extension represented the low area, *C*, that had crossed the Rocky Mountains on the 2d and was identical with low No. III of the U. S. series for May. In the central portion of this extensive trough a new storm whirl, *D*, developed that was central on the 7th, noon, at N. 55°, W. 26°; on the 8th, noon, at N. 58°, W. 20°, and at noon of the 9th, N. 56°, W. 14°; 10th, noon, N. 60°, W. 10°; 11th, noon, N. 60°, W. 8°, after which this disappeared in central Europe. Meanwhile, at the western extremity of this trough, area *C* was, on the 7th, noon, central near James Bay, and on the 8th, noon, in Labrador, after which it disappeared, probably filling up as it passed over Baffins Bay on the 9th.

E. On the 10th a small disturbance apparently began forming about N. 40°, W. 50°; it was central on the 11th at N. 40°, W. 45°; 12th, N. 42°, W. 43°; 13th, N. 44°, W. 42°, at which time it had stretched into an oval extending northwest and southeast and was dissipated by the 14th.

F. This was a continuation of low No. IV of the U. S. series, which was central on the Rocky Mountain slope on the 8th, and had by the 11th retired northward to Hudson Bay. Its path was far north of our reports, and it was soon lost in the extensive depression that prevailed over the North Atlantic.

G. This letter is given to the depression that developed on the 13th and 14th a little to the west of *E* and while the latter was apparently being dissipated. It was central on 14th, noon, N. 45°, W. 55°; 15th, noon, N. 48°, W. 57°; 16th, noon, N. 48°, W. 60°, after which it disappeared. During this progress northeastward an extensive area of high pressure had descended southwestward over Norway, Sweden, Great Britain, Iceland, and the North Atlantic, so that these regions were, from the 14th to the 17th, covered by this westward extension of the Siberian area of high pressure, while a corresponding area of low pressure advanced eastward over the United States and British America, which is described as No. V of the U. S. series.

H. On the 16th, while the preceding area, *G*, was being broken up as a distinct whirl over the Gulf of St. Lawrence, another subsidiary whirl was developing far to the southward, and by the 17th, noon, this was central N. 43°, W. 54°; it moved slowly, with diminishing winds and rising barometer, and disappeared on the 19th at N. 45°, W. 46°.

I. While the preceding depression, *H*, was filling up and disappearing on the 19th, another whirl and low pressure developed to the southward, and was central on the 20th at N. 38°, W. 45°. This was the third extensive whirl that had been formed at the southwestern border of the great area of high pressure that had slowly advanced west and south over the North Atlantic Ocean. On the 19th, noon, this high pressure, 30.55, or more, was central between Great Britain and Iceland, with northeast winds over the Atlantic north of N. 40° and east of W. 40°. On the 20th the highest pressure had apparently moved still further westward. These conditions favored the development of the cyclonic area, *I*, which moved slowly northeastward and was central on the 21st, noon, at N. 41°, W. 45°, while in its neighborhood winds of force 10, 11, and 12, with very low pressures, were reported by the steamers *Fürst Bismarck*, *America*, *Delano*, and *Dania*. On the 22d, noon, the area of low pressure had enlarged considerably and apparently included three subsidiary centers within 2° of the general center at N. 44°, W. 45°, and reports of low barometers, or high winds, were received from the steamers *Massachusetts*, *Fürst Bismarck*, *Delano*, and *Borghese*. The high pressure on the east of *I* now moved rapidly south while the center of *I* moved rapidly north, and on the 23d, noon, was at N. 51°, W. 41°; 24th, noon, N. 52°, W. 40°, after which this whirl disappeared, although a general and extensive area of low pressure still remained.

J. On the 10th pressure began to fall from British Columbia to the Gulf of California, and by the 14th, noon, a large area of low pressure was central in Montana and Idaho, which was No. V of the U. S. series. By the 17th, noon, this was central in Minnesota, and by the 18th over the lower Lake region, while an extensive area of high pressure had descended over the Arctic regions into Manitoba in the west and Great Britain in the east; on the southern side of this area the cyclonic lows *G*, *H*, and *I* had already been formed and dissipated, but when, on the 19th, the center of *J*, or the western

end of the whole depression, had advanced eastward to the Atlantic coast of Virginia the conditions that were favorable for its further special development were antagonized by the rapid movement westward toward Newfoundland and Labrador of the high pressure that was then prevailing over Great Britain. On the 20th, noon, the lowest pressure was still central in Virginia and the high pressure over Manitoba was still central in that region, while, on the other hand, pressure had rapidly risen, with northeast winds, over New England and the Maritime Provinces. To this latter feature we must attribute the breaking up of *J*, which had disappeared on the 21st, noon, and also the development of *I*, as above narrated.

K. This appeared as a feeble depression on the 24th, noon, on the middle Atlantic coast, and was identical with No. VIII, U. S. series, having apparently originated in Virginia during the preceding twelve hours. This area moved northeastward, reaching the Bay of Fundy on the 26th, noon; it then passed over the Gulf of St Lawrence, and on the 29th, noon, was at N. 52°, W. 48°. After this the cyclonic whirl rapidly increased in severity, and it was central as a severe storm on the 30th at N. 48°, W. 25°, while the low pressure that was then over Europe apparently extended westward toward it. On the 31st this storm was central at about N. 48°, W. 29°.

L. This letter is assigned to the extensive depression that prevailed over the Mediterranean on the 17th, while high pressure was reaching south and west over northern Europe and the Atlantic. Numerous local depressions apparently developed over southern Europe on the 16th, 17th, and 18th, while the dividing line, 29.9, between high and low pressure extended rapidly north and west, until, on the 20th and 21st, the low pressure prevailed over all Europe, except Great Britain. From the 22d to the 25th the high pressure on the north gradually extended over Sweden, Germany, and Russia, but by the 26th an extensive whirl and low pressure had developed over central Europe, and so continued during the 27th and 28th, after which it broke up and had disappeared by the 31st.

OCEAN FOG FOR MAY, 1894.

The limits of fog belts for May, 1894, as determined from reports of shipmasters, are shown on Chart I by dotted shading. More than the usual amount of fog was encountered in this month. Near the Grand Banks of Newfoundland fog was reported on 25 days; between the fifty-fifth and sixty-fifth meridians on 20 days; and west of the sixty-fifth meridian on 22 days. Compared with the corresponding month of the last six years, the dates of occurrence of fog near the Grand Banks numbered 8 more than usual; between the fifty-fifth and sixty-fifth meridians, 7 more than usual; and west of the sixty-fifth meridian, 6 more than usual.

OCEAN ICE IN MAY, 1894.

The following table shows the southern and eastern limits of the regions within which icebergs or field ice were reported in May for each year:

Southern limit.			Eastern limit.		
Month.	Lat. N.	Long. W.	Month.	Lat. N.	Long. W.
	° ′	° ′		° ′	° ′
May, 1883	40 30	47 00	May, 1883	45 40	45 12
May, 1884	41 30	47 30	May, 1884	43 30	44 50
May, 1885	40 50	48 15	May, 1885	42 30	40 10
May, 1886	41 36	51 30	May, 1886	48 55	46 13
May, 1887	39 38	46 00	May, 1887	39 38	46 00
May, 1888	41 00	46 00	May, 1888	41 00	46 00
May, 1889	43 07	55 47	May, 1889	49 46	36 48
May, 1890	40 50	50 28	May, 1890	44 12	36 25
May, 1891	40 49	49 07	May, 1891 *	48 00	45 00
May, 1892	42 14	51 20	May, 1892	45 05	41 14
May, 1893	41 05	55 55	May, 1893	47 02	42 16
May, 1894	40 34	48 35	May, 1894	43 31	43 37
Mean	41 12	49 54	Mean	45 02	42 44

* On the 7th three small pieces of ice were reported in N. 49° 03′, W. 33° 40′.

The limits of the region within which icebergs or field ice were reported for May, 1894, are shown on Chart I by crosses. The southernmost ice reported, a large berg observed on the 25th in the position given, was about one-half of a degree farther south than the average southern limit of ice for May, and the easternmost ice reported, a medium sized berg, noted on the 1st in the position given in the table, was over one degree east of the average eastern limit of ice for the month. Ice was reported in great quantities over the southern and northern parts of the Banks of Newfoundland. Two bergs each about 3,000 feet long were reported south of the Grand Banks on the 18th.

TEMPERATURE OF THE AIR.

[*In degrees Fahrenheit.*]

The distribution of the monthly mean temperature of the air over the United States and Canada is shown by the dotted isotherms on Chart II; the lines are drawn over the high irregular surface of the Rocky Mountain plateau, although the temperatures have not been reduced to sea level, and the isotherms, therefore, relate to the average surface of the country occupied by our observers; such isotherms are controlled largely by the local topography, and should be drawn and studied in connection with a contour map.

NORMAL TEMPERATURE.

In Table II, for voluntary observers, the mean temperature is given for each station, but in Table I, for the regular stations of the Weather Bureau, both the mean temperatures and the departures from the normal are given for the current month. In the latter table the stations are grouped by geographical districts, for each of which is given the average temperature and departure from the normal; the normal for any district or station may be found by adding the departures to the current average when the latter is below the normal and by subtracting when it is above.

MONTHLY MEAN TEMPERATURE.

For the regular stations of the Weather Bureau the monthly mean temperature is the simple mean of all the daily maxima and minima; for voluntary stations a variety of methods of computation is necessarily allowed, as shown by the notes appended to Table II.

During May, 1894, the highest mean temperatures were: Southeastern California, 90; southern Arizona, 88; and southern Texas, 82. The lowest temperatures were: at Canadian stations, 41 at Anticosti Island, and 44 at Sidney and White River; at United States stations: 46.7 at Eastport, 46.6 at Marquette, 47.7 at Sault Ste. Marie, and 48.1 at Tatoosh Island. The temperature averaged 32 at no point within the limits of our daily map, except on the peaks of the mountains.

DEPARTURES FROM NORMAL TEMPERATURE FOR MAY, 1894.

As compared with the normal for May the temperatures were decidedly in excess over the Rocky Mountain region and its eastern slopes, as also on the middle Atlantic coast, but were deficient in the central portion of the Lake region, Ohio Valley, and Tennessee, as also in the Pacific States. The

maximum excesses were: 5.4 at Rapid City, 4.2 at Topeka, 3.9 at Huron, 3.8 at Valentine, 3.8 at Hatteras, and 3.6 at Norfolk. The maximum deficits were: 4.0 at Portland, Oreg., 3.4 at Walla Walla, and 3.2 at San Diego.

The departures from normal temperature for the current month, and by districts, are as follows:

Positive departures: New England, 0.6; middle Atlantic States, 1.9; south Atlantic States, 0.7; west Gulf States, 0.6; lower Lake region, 0.2; North Dakota and extreme northwest, 1.3; upper Mississippi valley, 0.8; Missouri Valley, 2.0; northern slope, 2.9; middle slope, 1.5; southern slope (Abilene), 2.1; middle plateau, 1.3; southern plateau, 0.0.

Negative departures: Key West, 1.8; east Gulf, 0.1; Ohio Valley and Tennessee, 1.0; upper Lake region, 0.5; northern plateau, 1.5; north Pacific, 2.0; middle Pacific, 1.8; southern Pacific, 2.3.

The following table shows for certain stations, as reported by voluntary observers, the normal and extreme mean temperatures for this month:

State and station.	(1) Normal for the month of May.	(2) Length of record.	(3) Mean for May, 1894.	(4) Departure from normal.	(5) Extreme monthly means for May.			
					Highest.	Year.	Lowest.	Year.
Arizona.	°	*Years*	°	°	°		°	
Fort Apache	62.0	22	63.0	+ 1.0	67.6	1881	55.6	1884
Whipple Barracks	60.2	23	59.7	− 0.5	68.6	1876	54.3	1892
Arkansas.								
Keesees Ferry	67.4	12	67.6	+ 0.2	74.4	1886	62.9	1882
California.								
Riverside	65.4	12	62.4	− 3.0	69.0	1885	60.3	1891
Colorado.								
Las Animas	59.6	12	60.8	+ 1.2	65.6	1886	54.1	1892
Florida.								
Merritts Island	75.8	12	76.8	+ 1.0	79.2	1884	70.3	1886
Georgia.								
Forsyth	72.7	20	73.9	+ 1.2	75.8	1880	69.2	1877
Idaho.								
Boise Barracks	58.3	20	59.2	+ 0.9	63.5	1874	53.0	1880
Fort Sherman	54.4	11	.....	.....	57.9	1891	51.5	1882
Indiana.								
Lafayette	60.6	14	60.3	− 0.3	69.4	1881	55.0	1882
Iowa.								
Cresco	56.0	22	58.1	+ 2.1	64.1	1881	49.9	1888
Kansas.								
Eureka Ranch	63.2	11	65.4	+ 2.2	69.5	1887	55.0	1892
Independence	66.1	22	66.6	+ 0.5	72.0	1880	60.8	1872
Salina	65.2	10	65.2	0.0	71.3	1887	58.4	1892
Louisiana.								
Grand Coteau	74.1	11	74.8	+ 0.7	75.7	1884	70.4	1891
Maine.								
Orono	51.7	23	52.4	+ 0.7	55.9	1887	41.8	1884
Maryland.								
Cumberland	61.9	23	63.2	+ 1.3	67.0	1880	57.6	1882
Michigan.								
Kalamazoo	57.4	17	56.5	− 0.9	66.0	1881	41.3	1882
Missouri.								
Sedalia	64.2	11	66.0	+ 1.8	69.5	1887	60.1	1882
Montana.								
Fort Custer	55.0	12	58.0	+ 3.0	58.3	1886	52.2	1888
Nebraska.								
Fort Robinson	56.0	10	59.2	+ 3.2	66.4	1886	48.9	1892
Genoa (near)	59.3	18	63.1	+ 3.8	67.6	1880	52.2	1892
Nevada.								
Browns	65.2	22	.....	.....	71.3	1889	60.5	1873
Carson City	56.6	16	54.1	− 2.5	60.4	1875	51.3	1893
New Hampshire.								
Hanover	54.4	23	55.1	+ 0.7	62.0	1880	50.2	1882
New Mexico.								
Fort Wingate	59.8	22	60.6	+ 0.8	64.9	1875	54.2	1892
New York.								
Cooperstown	54.3	23	54.7	+ 0.4	60.7	1880, 1887	49.7	1882
Plattsburg Barracks	54.7	23	55.6	+ 0.9	60.9	1887	50.3	1882
North Carolina.								
Lenoir	62.7	21	64.4	+ 1.7	67.8	1887	48.0	1881
Oklahoma.								
Fort Reno	67.2	10	68.0	+ 0.8	73.9	1886	64.0	1885
Fort Sill	69.7	22	68.5	− 1.2	75.6	1886	64.7	1895
Fort Supply	65.5	15	66.2	+ 0.7	72.1	1886	58.8	1882
Oregon.								
Bandon	53.7	10	52.5	− 1.2	55.8	1891	50.7	1893
Pennsylvania.								
Dyberry	54.2	21	55.4	+ 1.2	64.1	1880	48.4	1882
Grampian	56.5	23	59.8	+ 3.3	65.1	1887	50.0	1882
Wellsboro	55.1	15	54.2	− 0.9	68.4	1879	50.4	1891
South Carolina.								
Statesburg	70.1	13	71.6	+ 1.5	73.8	1881	65.9	1885
South Dakota.								
Fort Sully	58.2	23	62.4	+ 4.2	68.4	1871	50.6	1892
Texas.								
Austin	74.6	18	78.4	+ 3.8	80.0	1886	72.3	1879
Silver Falls	69.8	8	.....	.....	76.6	1886	65.8	1888
Utah.								
Terrace	61.5	22	62.0	+ 0.5	71.9	1888	50.6	1882

Departures from normal temperature—Continued.

State and station.	(1) Normal for the month of May.	(2) Length of record.	(3) Mean for May, 1894.	(4) Departure from normal.	(5) Extreme monthly means for May.			
					Highest.	Year.	Lowest.	Year.
Vermont.	°	*Years*	°	°	°		°	
Strafford	55.1	21	54.4	− 0.7	63.0	1887	48.2	1892
Virginia.								
Dale Enterprise	63.8	14	63.2	− 0.6	72.0	1887	59.5	1893
Washington.								
Fort Townsend	53.7	22	51.0	− 2.7	57.0	1889	50.2	1880, 1893
West Virginia.								
Parkersburg	.....	.....	.....	.....	.....	.....	.....	.....
Wisconsin.								
Madison	56.2	23	57.4	+ 1.2	65.3	1881	51.5	1883
Wyoming.								
Fort Washakie	51.6	11	58.6	+ 7.0	59.2	1886	47.6	1892

YEARS OF HIGHEST MEAN TEMPERATURE FOR MAY.

The mean temperature for May, 1894, was the highest on record at regular Weather Bureau stations, as shown in the following table, which also gives the highest previous record:

Stations.	May, 1894.		Highest previous.	
	Mean temperature.	Departure from normal.	Temperature.	Year.
Topeka, Kans	65.6	+ 4.2	63.0	1889
Kansas City, Mo	64.9	+ 0.4	63.6	1890
Palestine, Tex	74.4	+ 2.4	73.8	1886
Hatteras, N. C	70.3	+ 3.8	69.1	1887

YEARS OF LOWEST MEAN TEMPERATURE FOR MAY.

The mean temperature for May, 1894, was the lowest on record at regular Weather Bureau stations, as shown in the following table:

Stations.	May, 1894.		Lowest previous.	
	Mean temperature.	Departure from normal.	Temperature.	Year.
Neah Bay, Wash	50.7	− 2.7	51.4	1893
Eureka, Cal	51.0	− 2.5	51.4	1893
Los Angeles, Cal	60.2	− 3.0	61.6	1891
San Diego, Cal	58.6	− 3.2	60.0	1873

MAXIMUM TEMPERATURE.

The maximum temperatures of the month at regular stations of the Weather Bureau are given in Table I, from which it appears that the highest maxima were: Yuma, 102; Tucson, 100; El Paso, 96; Abilene, 99; Columbia, S. C., 95; Cape Henry, 95. The lowest maxima were: Eastport, 75; Sault Ste. Marie, 75; Escanaba, 73; Marquette, 76; Tatoosh Island and Eureka, 63; Neah Bay, 70; San Diego and San Francisco, 72.

YEARS OF HIGHEST MAXIMUM TEMPERATURE FOR MAY.

The maximum temperature for May was the highest on record at regular Weather Bureau stations, as shown in the following table:

Stations.	May, 1894.		Highest previous.	
	Maximum.	Excess above previous record.	Temperature.	Year.
Port Angeles, Wash	81.0	+ 7.0	74.0	1888
Rapid City, S. Dak	91.0	+ 1.0	90.0	*
Huron, S. Dak	96.0	0.0	96.0	1886
Valentine, Nebr	95.0	0.0	95.0	1886
North Platte, Nebr	94.0	0.0	94.0	1880
Kansas City, Mo	90.0	+ 3.0	87.0	1890
Topeka, Kans	89.0	0.0	89.0	1889
Palestine, Tex	92.0	0.0	92.0	*

* Frequently.

MINIMUM TEMPERATURE.

The lowest temperatures recorded at regular stations of the Weather Bureau were: St. Vincent, 28; Havre, 28; Marquette and Escanaba, 29; Sault Ste. Marie, Alpena, Northfield, and Olympia, 30. Highest minima were: Key West, 66; Corpus Christi, 63; Galveston, 62; Port Eads, 60; Hatteras, 59; San Diego, 55; and Yuma, 50.

YEARS OF LOWEST MINIMUM TEMPERATURE FOR MAY.

The minimum temperatures for May were the lowest on record at regular Weather Bureau stations as shown in the following table:

Stations.	May, 1894.		Lowest previous.	
	Minimum.	Deficit below previous record.	Temperature.	Year.
Neah Bay, Wash.	33.0	0.0	33.0	1890
Fort Canby, Wash.	38.0	0.0	38.0	1887
Jupiter, Fla.	55.0	— 1.0	56.0	*
Titusville, Fla.	49.0	— 4.0	53.0	1889
Jacksonville, Fla.	46.0	— 2.0	48.0	1877
Savannah, Ga.	44.0	— 4.0	48.0	1877
Charleston, S. C.	45.0	— 2.0	47.0	1876
Columbia, S. C.	40.0	— 1.0	41.0	1891
Augusta, Ga.	41.0	— 1.0	42.0	*
Atlanta, Ga.	39.0	— 1.0	40.0	*
Chattanooga, Tenn.	40.0	0.0	40.0	*
Knoxville, Tenn.	34.0	— 2.0	36.0	1889
Lexington, Ky.	32.0	— 2.0	34.0	1888
Cincinnati, Ohio	35.0	0.0	35.0	1883
Portland, Oreg.	32.0	— 1.0	33.0	1878
Carson City, Nev.	22.0	— 2.0	24.0	1892
Fresno, Cal.	40.0	— 1.0	41.0	1892
San Francisco, Cal.	45.0	0.0	45.0	*
San Diego, Cal.	45.0	0.0	45.0	1883
Fort Smith, Ark.	40.0	0.0	40.0	1889

* Frequently.

DAILY AND MONTHLY RANGES OF TEMPERATURE.

Greatest daily ranges.—Huron, 50; St. Vincent, 44; Laramie, 49; Pueblo, 47; Idaho Falls, 46.

Smallest daily ranges.—Hatteras, 16; Key West, 15; Port Eads, 17; Galveston, 13; Corpus Christi, 15; Tatoosh Island, 13.

Largest monthly ranges.—Idaho Falls, Laramie, North Platte, and Sioux City, 61; Olympia, 62; Huron and Moorhead, 63.

Smallest monthly ranges.—Tatoosh Island, 27; Eureka and San Diego, 27; San Francisco, 28; Galveston and Port Eads, 26; Hatteras, 21; Key West, 20; Corpus Christi, 25.

DIURNAL PERIODICITY.

The regular diurnal period in temperature is shown by the hourly means given in Table V for all stations having self-registers.

LIMITS OF FREEZING TEMPERATURE.

The region within which the air has had a freezing temperature at some time during the month is bounded by the minimum isotherm of 32°. This line, so far as can be judged from our charts, passed from central Maine westward to central Michigan and thence northwest along the northern boundary of Wisconsin and westward to central North Dakota; it then passed southward, taking in the whole of the mountainous part of Colorado, northern Utah, Idaho, and the western portions of Oregon and Washington. The line of minimum 40° passed from Cape Cod eastward to northern Pennsylvania, southward to northern Georgia, and thence northwest to Saint Louis, thence west-southwest to central New Mexico and northwest to California.

ACCUMULATED TEMPERATURES.

From January 1 to the end of the current month the average temperature for each geographical district was above or below the normal by an amount that is given in the last column of the following table. The accumulated departures from normal temperatures, as given in the second column, may be used for comparison with the departures of current conditions of vegetation from the normal conditions.

Districts.	Positive departures.		Districts.	Negative departures.	
	Acc.	Average.		Acc.	Average.
	°	°		°	°
New England	+ 6.7	+ 1.3	Southern plateau	— 9.4	— 1.9
Middle Atlantic	+11.2	+ 2.2	Middle plateau	— 4.9	— 1.0
South Atlantic	+ 8.4	+ 1.7	Northern plateau	— 2.9	— 0.6
Key West	+ 1.2	+ 0.2	Northern Pacific	— 8.2	— 1.6
East Gulf	+ 3.7	+ 0.7	Middle Pacific	— 9.9	— 2.0
West Gulf	+ 4.5	+ 0.9	Southern Pacific	—12.8	— 2.6
Ohio Valley and Tennessee	+ 8.6	+ 1.7			
Lower Lake	+14.7	+ 2.9			
Upper Lake	+16.5	+ 3.3			
North Dakota (Ex. NW.)	+11.1	+ 2.2			
Upper Mississippi	+13.0	+ 2.6			
Missouri Valley	+11.2	+ 2.2			
Northern slope	+ 1.4	+ 0.3			
Middle slope	+ 4.3	+ 0.9			
Southern slope (Abilene)	+ 5.8	+ 1.2			

PERIODS OF HIGH TEMPERATURE.

The maximum temperatures of May usually occurred about the middle of the month, except in Washington, Oregon, and Idaho, where they occurred at the end of the month, and in northern New York and New England, where they occurred at the beginning of the month. The dates of occurrence of the monthly maxima were the 13th, 14th, and 15th, in North Dakota, South Dakota, Nebraska, Colorado, Kansas, Iowa, Minnesota, western Illinois, and Wisconsin. On the 16th an area of high temperature had advanced southward over Missouri and eastward over Indiana and Lake Michigan. By the 17th this area of highest temperature had advanced southeast over Ohio, Kentucky, Tennessee, the south Atlantic, and northern portion of the Gulf States. This was the most decided and extensive southeasterly movement of high temperatures during the month, but all other areas of high temperatures pursued a similar course.

AREAS OF 20° RISE IN TWENTY-FOUR HOURS.

The daily weather charts show by heavy dotted lines the regions over which the temperature has risen 20° in the preceding twenty-four hours. The occurrence of such rapid rises becomes less frequent as we approach the midsummer season, and the following is a list of these areas, with their diameters, in miles:

(A) 10th, p. m., 600 by 200, Wyoming, Montana, and Saskatchewan.

(B) 10th, p. m., 100 by 100, western New York and Lake Erie.

(C) 11th, p. m., 100 by 100, southeast Colorado.

(D) 31st, p. m., 100 by 300, Minnesota and Wisconsin.

PERIODS OF LOW TEMPERATURE.

The lowest temperatures of the month occurred principally between the 18th and 22d over the eastern slope of the Rocky Mountains, the Mississippi Valley, and the Atlantic States. The minimum temperatures in California and Oregon occurred on the 16th, in connection with the extensive high area that was then central off the coast of Oregon. Two days after this the highest pressure was central in Manitoba and Saskatchewan, and as it moved southeastward brought the lowest pressure of the month to the Mississippi Valley and the south Atlantic States. The minimum temperatures occurred on the 19th in southern Wisconsin, Iowa, Missouri, Illinois, Arkansas, Kansas, Nebraska, and Oklahoma; on the 20th in Texas, Louisiana, Mississippi, Alabama, Florida, Georgia, South Carolina, Tennessee, Kentucky, and Ohio; on the 21st in North Carolina and Virginia; 22d, in Connecticut and Massachusetts.

AREAS OF 20° FALL IN TWENTY-FOUR HOURS.

A fall of temperature of 20°, or more, in twenty-four hours is not called a cold wave by the Weather Bureau unless the tem-

perature falls below 40°, and is, therefore, likely to cause a frost injurious to vegetation, but all falls of 20° are indicated on the Daily Weather Map by inclosing the areas within which they occur by heavy dotted lines, and the following list enumerates these regions for the month of May:

(A) 3d, a. m., 200 by 100, northern New York; 3d, p. m., 300 by 200, New England and Nova Scotia.

(B) 10th, a. m., 100 by 100 in South Dakota.

(C) 10th, p. m., 500 by 200 in central Texas.

(D) 11th, p. m., 200 by 100 in western New York and Lake Erie.

(E) 13th, p. m., 400 by 200 in Minnesota and Wisconsin.

(F) 14th, p. m., 100 by 100 in Nevada.

(G) 15th, p. m., 100 by 100 in Utah.

(H) 16th, p. m., 300 by 200, in South Dakota.

(I) 17th, p. m., 300 by 200 in the Missouri Valley. 18th, a. m., 300 by 300 in Iowa and Illinois; 18th, p. m., 1,100 by 400 in Arkansas, Missouri, Illinois, Tennessee, Kentucky, Indiana, Ohio, Michigan, and Lake Huron. 19th, a. m., 1,000 by 300 in Alabama, Tennessee, Kentucky, Ohio, Lake Erie, and western New York; 19th, p. m., 600 by 200 in West Virginia, western Kentucky, western Tennessee, and northern Georgia. 20th, a. m., 400 by 200 in South Carolina, Georgia, and Florida.

(J) 20th, p. m., 500 by —— in Manitoba. 26th, p. m., 400 by 200 in Minnesota and Wisconsin. 27th, p. m., 100 by 100 in southern Wisconsin and northern Illinois, also 200 by 100 in Michigan and Lake Huron. 28th, a. m., 400 by 500, lakes Huron, Erie, and Ontario; 28th, p. m., 400 by 200, New York and Pennsylvania.

(K) 31st, p. m., 200 by 200 in Texas.

DESTRUCTIVE FROSTS.

Destructive frosts were reported on the following dates at the localities mentioned in the respective States:

2d.—Nevada: Carson City.

6th.—Arizona: Wilgus.

8th.—Washington: Ferry.

9th.—Oregon: Portland. Washington: Ferry.

10th—New York: Washington County. Washington: Seattle.

11th.—Massachusetts: Boston and Mansfield.

12th.—Tennessee: Franklin.

13th.—Massachusetts: Taunton. Tennessee: Franklin.

14th.—Massachusetts: Taunton.

15th.—Connecticut: Greenfield Hill, Norwalk, Storrs. Massachusetts: Amherst, Taunton, East Templeton. New Hampshire: Brookline. New York: Albany, Bedford, Elmira, Kingston, Oswego, Rome, Troy, Utica, Pulaski, Mexico, Medina, Lockport. Vermont: Norwich.

16th.—Nevada: Yerington.

18th.—Illinois: Martinsville, Winnebago. Indiana: Delphi, Jasper, Mauzy. Nebraska: Culbertson. Missouri: Lebanon. Ohio: New Bremen. Wisconsin: Sharon.

19th.—Georgia: Marshallville. Illinois: Louisville, Riley. Indiana: Veedersburg. Iowa: Alta, Amana, College Springs, Cresco, Des Moines, Glenwood, Greenfield, Hampton, Panama, Sioux City, Spirit Lake. Kansas: Allison, Colby, Concordia, Eureka Ranch, Garfield, Ionia, Pleasant Dale, Sedan, Utica, Wamego, Yates Center. Minnesota: Carver, Maple Plain, Milan, Montevideo, Moorhead. Missouri: Carrollton, Hannibal, Lebanon, Oregon, Phillipsburg, Princeton, Springfield. Nebraska: Beaver City, Ericson, Ewing, Glenwood, Hartington, Harvard, North Platte, Omaha, O'Neill, Ravenna, Seward, Valentine. North Carolina: Columbus. Ohio: New Bremen, Ripley. Oklahoma: Oklahoma. South Carolina: Trenton. South Dakota: Huron. West Virginia: Cloverdale. Wisconsin: Fond du Lac, Sharon.

20th.—Georgia: Adairsville. Illinois: Louisville. Iowa: Davenport. Kansas: Coffeyville, Grenola, Independence, Topeka, Wamego. Kentucky: Greendale. Mississippi: Meridian. Missouri: Arthur, Eight Mile, Grovedale, Hannibal, Oregon, Phillipsburg, Princeton, Sarcoxie. Nebraska: Ericson. North Carolina: Columbus. Ohio: Ripley. South Carolina: Trenton. Texas: Denison. Wisconsin: Fond du Lac.

21st.—Georgia: Adairsville. Kansas: Wamego. Mississippi: Enterprise. Missouri: Arthur.

22d.—Georgia: Adairsville. Massachusetts: Amherst, East Templeton. Missouri: Sarcoxie. Ohio: Pataskala.

26th.—California: Susanville. Georgia: Savannah.

28th,—California: Fall Brook, Julian. Indiana: South Bend. Iowa: Amana, Cresco. Michigan: Berrien Springs, Escanaba, Grand Haven. Wisconsin: Green Bay, Lincoln.

29th.—Michigan: Escanaba. New Mexico: Olio. New York: Angelica, Humphrey. North Carolina: Bailey. Ohio: Green Hill, Pataskala, Paoli. Pennsylvania: Grampian, Pittsburg. Washington: Powellton. West Virginia: Bloomery, Burlington, Tannery.

30th.—New Hampshire: Brookline.

31st.—Iowa: Amana.

TEMPERATURE AS AFFECTING AGRICULTURE.

The following records of agricultural conditions are taken from newspaper summaries and the official reports of the State Weather Services:

Arkansas.—The first half of the month the temperature was highly favorable for all crops, but from the 18th to the 31st, inclusive, it was below the normal. On some lowlands in the extreme northwest portion of the State corn was killed by the frost of the 20th; this damage was not general, but the cool nights were detrimental to all plant growth and particularly so to cotton. No serious damage was done to the cotton plant, except in a few isolated localities where the stands were injured.

Florida.—The growth of crops was checked for a few days by the exceptionally low temperature of the 19th, 20th, and 21st.

Iowa.—The freezing weather on the 19th and 20th checked the advance of all crops and seriously damaged fruit, tender vegetation, and spring grain, in many localities.

Indiana.—The weather conditions the first half of the month were very favorable to all crops; the latter part frosts injured gardens to some extent. Cereals and pastures are generally in good condition.

Kentucky.—The damage to the crops resulting from the unprecedented freezing temperatures of the 20th was not so great as at first supposed.

Louisiana.—The cool weather in the mornings of the 19th and 21st produced light frosts in a few of the interior and northern parishes and had a retarding effect on vegetation.

Michigan.—The average condition of meadows and pasture in the four southern tiers of counties is 89 per cent, an average much below what would ordinarily be expected in a season when weather conditions were as favorable as prevailed in May.

Minnesota.—Very favorable weather conditions until the frosts of the 18th, 19th, and 20th, which cut all tender vegetation to the ground; the damage was principally confined to the southern and central portions of the State, and the field crops, with the exception of corn and potatoes, received but little injury. Under the following favorable weather conditions the injured crops, except fruit, made an almost entire recovery, and agricultural prospects were very encouraging until the 28th when the tender plants received another set back from the frost which, although general, was not so damaging as the earlier one. These heavy frosts worked but little injury to the cereals, other than the maize, and their condition, together with pasturage and grass, was upon the whole excellent at the close of the month.

Mississippi.—A cold wave entered the State on the night of the 19th, and since then the weather has remained too cold for all vegetation, cotton especially suffering from cold nights.

Missouri.—The lowest temperatures occurred on the 19th and 20th, and killing frosts were general over the State on those dates, doing considerable damage to tender vegetation.

Nebraska.—The freeze of the 18–19th did great damage to grain crops, fruit, and vegetation generally in many parts of the State. At Ravenna, Buffalo Co., leaves of walnuts, catalpas, ash, and mulberries killed; cherries, strawberries, potatoes, and part of the corn also killed. Sutton, Clay Co.: winter wheat nearly all turned over and planted in corn; oats in poor condition; corn, large area planted and all in good condition; grapes, cherries, apples, potatoes, cabbage, and strawberries killed.

Nevada.—The heavy frost of the 15th and 16th injured fruit prospects to a great extent. The stock ranges are reported to be in good condition and stock better than for years.

New England.—A great deal of fruit was injured in this section by the cold spell of the 14th to 16th, while elsewhere the damage was confined mostly to planted crops. Moderate damage was again done on the 22d.

although many fields were saved by a dense fog. A clipping referring to the frost on the 15th in Vermont states: "In the hill towns the usual peculiarity of such cold waves was observed; the freeze went in streaks, in some cases the apple blossoms were unmistakably frozen, while perhaps only a few rods away the blooms appeared to be uninjured.

North Carolina.—During the first eighteen days of May the temperature was generally above the normal; a cold wave followed on the 20th, preceded by snow in the mountains, which lowered the temperature below 32 at several stations in the western district, with considerable injury to the crops. The remainder of the month was generally cool and unfavorable to the rapid growth of vegetation.

North Dakota.—The temperature was about the average for the month, the frosts were light and no injurious effects have been reported. Generally speaking the outlook for the farmers is good, particularly in the northern and eastern parts.

Oklahoma.—Light frosts occurred throughout the Territory on the mornings of the 19th and 20th, damaging corn, cotton, and tender vegetation slightly on low lands and creek bottoms. Wheat harvest, by the close of the month, had begun in a few fields; grain ripening unusually early. The outlook is favorable for a good average wheat crop; large corn crop; oats short; cotton, potatoes, grass, vegetables, and small fruits excellent.

South Carolina.—From the 1st to the 19th the month was favorable for agricultural interests. After the 19th the conditions were adverse, principally on account of a cool wave that carried the temperature as low or lower than ever before recorded during the latter part of May in this State. Light frosts were noticed on the mornings of the 20th and 21st over the greater part of the State, and vegetation suffered severely, especially the more tender varieties, such as cotton and the various cultivated vines, not so much from the frost as from the prevailing cool nights.

South Dakota.—Frosts sufficiently heavy to kill delicate vines and cut field crops occurred in different portions of the State during the whole month. The most general killing frost over the eastern portion of the State occurred on the 19th.

Tennessee.—A cool wave passed over the State on the 18th, causing light frosts in some of the western counties, but no damage was done to crops aside from temporarily retarding their growth. Covington: Growing crops damaged by unseasonably cold weather. Lynnville: A cold wave struck us on the morning of the 18th and lasted until the end of the month; much damage was done to tender vegetation; nearly all the apples are falling from the trees. Nunnelly: The latter portion of the month has been very cold, and vegetation has suffered greatly therefrom.

Texas.—Except for the hail in a few localities the weather was generally favorable for cotton, which was in good condition generally. Maize was blooming or tasseling over the northern portion of the State by the 22d, and the prospects for a good crop continue promising. Early sown oats were beginning to ripen over the southern portions of the State by the 31st.

Washington.—Vegetation made good growth, and, with the exception of the prune and cherry crops, which were injured by frosts in some of the western counties, this year's crops are in a very promising condition in all districts not affected by the inundations.

West Virginia.—Killing frost on the 29th, injurious to tender garden truck. Crops did not make satisfactory growth during the month, the conditions on the average being unfavorable, melons and corn being the most seriously affected.

Wisconsin.—Fond du Lac: The frosts of the 19th and 20th did much damage to strawberries and small fruits, and some injury to early corn and potatoes. Harvey: At the end of the month it was found that fruit was not so badly hurt as at first supposed; small grains looking excellent.

PRECIPITATION.

[*In inches and hundredths.*]

The distribution of precipitation for the month of May, 1894, as determined by reports from about 2,000 stations, is exhibited on Chart III. The numerical details are also given in Tables I, II, and III; the first of these gives the average departures from the normal for each district, whereas the average departure for each State is given in the chapter on State Weather Services.

NORMAL PRECIPITATION FOR MAY.

The normal precipitation for the month of May is less than 1 in the southern plateau and the southern Pacific regions; it is from 1 to 2 over the middle Pacific, northern, and middle plateau; from 2 to 3 in the North Dakota, northern slope, and north Pacific regions; from 3 to 4 in New England, middle Atlantic, Key West, and Ohio Valley regions; from 4 to 5 in the lower Lake, upper Lake, south Atlantic, east Gulf, and west Gulf regions.

PRECIPITATION FOR CURRENT MONTH.

The total precipitation for May exceeded 6 in the southern slope, or Abilene region, and exceeded 5 in the middle Atlantic and lower Lake region. Areas of 8 to 10 occurred in Arkansas, Michigan, and Pennsylvania.

CURRENT DEPARTURES FROM NORMAL PRECIPITATION.

The precipitation for May was most decidedly in excess of the normal in Pennsylvania, being 6.5 above the average at Philadelphia and still more in the interior of the State. The principal region of excess covered the middle Atlantic and Eastern States, the lower Lake region, Michigan, Ohio, Indiana, and Kentucky, and portions of Wisconsin and Minnesota; a slight excess prevailed in northern California; the principal region of deficit was in the eastern Gulf States, the upper Mississippi and lower Missouri valleys. A maximum deficit of 4.4 occurred at Titusville and an excess of 4.1 at Tampa, on opposite sides of the Florida Peninsula.

The following table shows for certain stations, as reported by voluntary observers, the normal and extreme total precipitation for this month:

State and station.	(1) Average for the month of May.	(2) Length of record.	(3) Total for May, 1894.	(4) Departure from average.	(5) Extremes for May.			
					Greatest.		Least.	
					Amt.	Year.	Amt.	Year.
Arizona.	*Inches.*	*Years*	*Inches.*	*Inches.*	*Inches.*		*Inches*	
Fort Apache	0.56	18	0.79	+ 0.23	2.18	1893	0.00	*
Whipple Barracks	0.60	23	0.23	— 0.37	1.82	1877	0.00	*
Arkansas.								
Keesees Ferry	6.09	12	9.41	+ 3.32	10.56	1882	1.97	1891
California.								
Riverside	0.39	13	0.26	— 0.13	1.99	1884	0.00	1886, '93
Colorado.								
Las Animas	1.82	12	1.20	— 0.62	5.06	1882	0.09	1893
Florida.								
Merritts Island	3.88	16	0.74	— 3.14	11.58	1890	0.74	1894
Georgia.								
Forsyth	3.27	20	3.56	+ 0.39	7.31	1890	0.45	1877
Idaho.								
Boise Barracks	1.41	20	2.08	+ 0.67	3.51	1892	0.07	1881
Fort Sherman	1.87	11	.....	.....	3.75	1893	0.66	1884
Indiana.								
Lafayette	4.81	14	5.16	+ 0.35	8.79	1892	1.98	1891
Iowa.								
Cresco	3.47	22	2.63	— 0.84	7.89	1880	0.76	1874
Kansas.								
Independence	4.67	22	3.71	— 0.96	10.64	1892	0.92	1879
Salina	4.10	10	3.02	— 1.08	8.92	1889	0.27	1888
Louisiana.								
Grand Coteau	5.23	11	1.92	— 3.31	14.03	1884	0.21	1889
Maine.								
Orono	3.49	23	3.84	+ 0.35	10.52	1890	1.25	1887
Maryland.								
Cumberland	3.28	22	6.13	+ 2.85	7.13	1890	0.30	1875
Michigan.								
Kalamazoo	4.25	18	8.33	+ 4.08	8.33	1894	1.44	1885
Missouri.								
Sedalia	5.16	15	3.94	— 1.22	10.47	1892	0.97	1879
Montana.								
Fort Custer	2.44	13	1.98	— 0.46	7.29	1893	0.47	1885
Nebraska.								
Fort Robinson	2.92	10	0.79	— 2.13	6.39	1888	0.72	1893
Genoa (near)	4.24	18	1.86	— 2.38	7.80	1877	0.83	1880
Nevada.								
Browns	0.28	22	.....	.....	1.10	1887	0.00	*
Carson City	0.60	16	1.07	+ 0.47	2.80	1891	0.04	1880
New Hampshire.								
Hanover	3.24	23	3.38	+ 0.14	6.26	1892	0.81	1879
New Mexico.								
Fort Wingate	0.52	22	0.02	— 0.50	3.00	1872	0.00	1879
New York.								
Cooperstown	3.67	23	5.29	+ 1.62	8.84	1890	0.36	1879
Plattsburg Barracks	2.58	23	4.14	+ 1.56	5.00	1890	0.18	1879

Departures from average precipitation—Continued.

State and station.	(1) Average for the month of May.	(2) Length of record.	(3) Total for May, 1894.	(4) Departure from average.	(5) Extremes for May. Greatest. Amt.	Greatest. Year.	Least. Amt.	Least. Year.
North Carolina.	*Inches.*	*Years*	*Inches.*	*Inches.*	*Inches.*		*Inches*	
Lenoir	4.80	22	3.53	— 1.27	11.50	1873	1.60	1881, '83
Oklahoma.								
Fort Reno	4.00	11	1.30	— 2.70	9.33	1885	0.31	1886
Fort Sill	4.76	22	4.20	— 0.56	9.74	1880	0.07	1886
Fort Supply	3.56	15	5.22	+ 1.66	7.84	1883	0.06	1886
Oregon.								
Bandon	3.50	16	1.55	— 1.95	7.79	1879	0.23	1890
Pennsylvania.								
Dyberry	3.28	21	6.25	+ 2.97	6.25	1894	0.36	1875
Grampian	4.38	22	7.53	+ 3.15	11.60	1889	1.29	1891
Wellsboro	5.26	15	10.23	+ 4.97	10.23	1894	1.30	1891
South Carolina.								
Statesburg	3.63	13	1.46	— 2.17	6.68	1888	1.24	1882
South Dakota.								
Fort Sully	2.63	23	0.25	— 2.38	5.05	1874	0.25	1894
Texas.								
Austin	4.12	18	3.85	— 0.27	8.40	1885	T.	1886
Silver Falls	1.60	8	.....	.....	4.25	1887	0.01	1886
Utah.								
Terrace	0.38	22	0.50	+ 0.12	1.20	1891	0.00	*
Vermont.								
Strafford	3.40	21	4.01	+ 0.61	7.60	1890	0.40	1877
Virginia.								
Dale Enterprise	5.43	14	5.70	+ 0.27	12.66	1886	1.06	1880
Washington.								
Fort Townsend	2.00	20	2.57	+ 0.57	7.81	1875	0.30	1891
West Virginia.								
Parkersburg	3.84	9	3.29	— 0.55	5.87	1893	1.05	1885
Wisconsin.								
Madison	3.67	23	3.36	— 0.31	6.98	1883, '92	1.02	1877
Wyoming.								
Fort Washakie	2.64	11	1.08	— 1.56	5.77	1882	0.41	1887

*Frequently.

Considered by districts the precipitation for May, 1894, when compared with the normal for the month, furnishes the departures given in Table I, as expressed in inches, and also the corresponding following percentages, as found by dividing those departures by the normal precipitation for May (precipitation is in excess when the percentage of the normal exceeds 100):

Deficits: South Atlantic States, 93; east Gulf States, 63; west Gulf States, 45; Ohio Valley and Tennessee, 92; North Dakota, or the extreme northwest, 91; upper Mississippi Valley, 71; Missouri Valley, 42; northern slope, 64; northern plateau, 88; north Pacific, 96.

Excesses: New England States, 112; middle Atlantic States, 150; Key West, 128; lower Lake region, 159; upper Lake region, 160; middle slope, 112; southern slope (Abilene), 151; southern plateau, 163; middle plateau, 100; middle Pacific, 100; south Pacific, 126.

ACCUMULATED PRECIPITATION.

The accumulated departures from normal precipitation from the beginning of the year to the end of May are given in the following table:

Districts.	Deficits. Amt.	Deficits. Per cent.	Districts.	Excesses. Amt.	Excesses. Per cent.
New England	3.80	80	Upper Lake	2.30	119
Middle Atlantic	2.00	89	North Dakota (Ex. NW.)	2.00	134
South Atlantic	5.70	72	Northern slope	0.40	107
Key West	2.90	70	Northern plateau	3.80	143
East Gulf	1.40	94	North Pacific	10.60	136
West Gulf	2.20	89			
Ohio Valley and Tennessee	2.40	89			
Upper Mississippi	1.50	89			
Missouri Valley	2.80	76			
Middle slope	0.40	95			
Southern slope (Abilene)	1.00	92			
Southern plateau	0.30	89			
Middle plateau	0.60	91			
Middle Pacific	2.30	87			
South Pacific	4.60	42			
Lower Lake	0.00	100			

YEARS OF GREATEST PRECIPITATION FOR MAY.

The precipitation for the current month was the greatest on record for the month of May at the regular Weather Bureau stations shown in the following table:

Station.	Current precipitation. Amount.	Current precipitation. Departure.	Previous maximum. Amount.	Previous maximum. Year.
Savannah, Ga	5.93	+ 3.0	5.22	*
Baltimore, Md	7.20	+ 3.7	7.07	1886
Philadelphia, Pa	9.46	+ 6.5	5.83	1873
Portland, Me	7.33	+ 4.0	6.40	1884
Vineyard Haven, Mass	4.78	+ 1.7	4.45	1889
Rochester, N. Y	6.87	+ 3.8	6.53	1883
Port Huron, Mich	6.97	+ 3.7	5.69	1883
Alpena, Mich	6.99	+ 2.4	6.56	1876
Grand Haven, Mich	6.35	+ 2.9	6.02	1883
Green Bay, Wis	6.93	+ 4.0	5.18	1890
Marquette, Mich	8.09	+ 5.4	6.60	1872
Abilene, Tex	6.49	+ 2.2	6.12	1892
Colorado Springs, Colo	7.34	+ 4.5	5.90	1874
Port Angeles, Wash	1.96	+ 0.9	1.87	1892

*Frequently.

YEARS OF LEAST PRECIPITATION FOR MAY.

The precipitation for the current month was the least on record for the month of May at the regular Weather Bureau stations shown in the following table:

Station.	Current precipitation. Amount.	Current precipitation. Departure.	Previous minimum. Amount.	Previous minimum. Year.
Kansas City, Mo	2.08	—2.2	3.31	1890
Des Moines, Iowa	1.41	—3.6	1.70	1885
Omaha, Nebr	0.61	—3.9	1.24	1874
Huron, S. Dak	0.43	—3.0	0.44	1891
Rapid City, S. Dak	0.72	—3.6	1.72	1891
Valentine, Nebr	0.17	—3.6	1.33	1894
North Platte, Nebr	0.39	—2.6	0.81	1887

EXCESSIVE PRECIPITATION.

The following tables for May, 1894, show, by States, the number of stations reporting total precipitation to equal or exceed 10.00 inches during this month, 2.50 in 24 hours, and 1.00 in 1 hour:

Monthly precipitation to equal or exceed 10.00.

State.	Number of stations.	State.	Number of stations.
Pennsylvania	31	Maryland	1
New Jersey	17	Texas	1
New York	3	Wisconsin	1
Delaware	2		

Daily precipitation to equal or exceed 2.50 *in* 24 *hours.*

State.	Number of stations.	Dates.	State.	Number of stations.	Dates.
Pennsylvania	39	17, 18, 18–19, 19, 19–20, 19–21, 20, 20–21, 20–22, 21, 28.	Louisiana	3	15, 24–25.
			Minnesota	3	15, 15–16, 16.
			Alabama	2	14, 23.
New Jersey	25	18, 19–20, 20, 20–21, 21, 28–29.	California	2	14, 14–15.
			Connecticut	2	19–20.
Missouri	18	4, 4–5, 5, 8–9, 9, 9–10.	Kansas	2	2, 30.
Colorado	16	29, 29–30, 30, 30–31, 31.	New York	2	19–20, 20.
			North Carolina	2	18, 18–19.
Texas	14	8, 9–10, 10, 10–11, 11, 12, 30–31, 31.	Oklahoma	2	30–31.
			South Carolina	2	7–8, 8.
Wisconsin	10	14–15, 15, 15–16, 17–18, 18.	Georgia	1	15.
			Indian Territory	1	9.
Arkansas	6	* 5.	Iowa	1	5.
Maryland	6	5–6, 6, 18–19, 19–20, 20–21.	Maine	1	24–25.
			Mississippi	1	12.
Michigan	4	5–6, 15–16, 16, 17, 17–18.	Montana	1	16.
			New Hampshire	1	29.
Virginia	4	18–19, 19, 19–20, 20.	Ohio	1	6.
Delaware	3	20–21.	West Virginia	1	19.
Florida	3	26, 26–27, 27.			

*April 30–May 1.

Hourly precipitation to equal or exceed 1.00.

State.	Number of stations.	Dates.	State.	Number of stations.	Dates.
Texas	9	8, 9, 11, 12, 30, 31.	Michigan	2	16, 17.
Louisiana	8	12, 13, 14, 15, 16, 24.	Tennessee	2	14.
Minnesota	5	4, 13, 15.	Virginia	2	16.
Ohio	5	6, 15, 17, 26.	Illinois	1	1.
Florida	4	16, 17, 18, 26, 27.	Indiana	1	6.
Georgia	4	12, 14, 29.	Iowa	1	5.
Missouri	4	9, 17, 30.	Maine	1	25.
Arkansas	3	8, 9, 30.	Nebraska	1	8.
Kansas	3	2, 30.	New York	1	18.
Mississippi	3	8, 11, 12.	North Dakota	1	14.
North Carolina	3	17, 18.	Oklahoma	1	4.
South Carolina	3	7, 8, 30.	Pennsylvania	1	18.
Alabama	2	10, 14.	West Virginia	1	26.
Kentucky	2	3, 6.	Wisconsin	1	17.

Excessive precipitation, by stations, for May, 1894.

State and station.	Monthly rainfall 10 inches, or more.	Rainfall 2.50 inches, or more, in 24 hours.		Rainfall 1 inch, or more, in one hour.		
		Amt.	Day.	Amt.	Time.	Day.
Alabama.	*Inches.*	*Inches.*		*Inches*	*h. m.*	
Mount Willing		2.60	14			
Newton		4.68	23			
Oxanna				1.23	1 00	14
Wilsonville				1.55	1 30	10
Arkansas.						
Arkadelphia		4.00	*			
Conway				1.20	0 45	30
Dardanelle		3.46	*			
Hot Springs *a*		3.25	*			
Keesees Ferry		2.84	4			
Malvern		5.26	*			
Osceola		3.44	5			
Rogers				1.34	1 20	9
Searcy				1.20	1 15	3
California.						
Campo Seco		2.70	14			
Kennedy Gold Mine		3.46	14-15			
Colorado.						
Canyon		4.31	31			
Castle Rock		2.84	30			
Colorado Springs		3.00	29-30			
Dumont		2.65	31			
Glen Eyrie		3.13	30			
Gold Hill		5.25	30-31			
Hugo (near)		2.70	30-31			
Lake Moraine		5.50	29-30			
Moraine		3.30	30-31			
Pikes Peak		4.57	29-30			
River Bend		3.00	30-31			
Rocky Ford		3.50	29-31			
Smoky Hill Mine		3.00	31			
Springfield		4.00	29			
Sunnyside		4.65	29-30			
Ward District		6.80	30-31			
Connecticut.						
Canton		2.52	20			
West Simsbury		2.70	19-20			
Delaware.						
Milford		2.55	20-21			
Newark	12.67	4.34	20-21			
Wilmington	11.99	6.99	20-21			
Florida.						
Brooksville				1.08	0 25	16
Do				1.09	1 00	17
Key West		3.47	27	2.65	2 00	27
Orlando				1.13	0 40	18
Tampa		2.82	26-27	2.80	2 35	26
Tarpon Springs		4.07	26			
Georgia.						
Brag		3.33	15			
Canton				1.64	1 05	14
Fleming				1.18	1 00	29
Poulan				1.01	0 30	12
Reynolds				1.72	0 45	14
Illinois.						
Peoria *b*				1.03	1 00	1
Indiana.						
Mount Vernon				2.06	1 00	6
Indian Territory.						
Kemp		2.54	9			
Iowa.						
Cedar Falls				1.00	0 30	5
Clinton		2.50	5			
Kansas.						
Concordia				1.50	0 30	30
Eureka Ranch		5.10	2	5.10	5 00	2
Wakefield		2.65	30	2.65	1 50	30
Kentucky.						
Edmonton				1.35	1 00	6
Paducah *b*				1.28	1 00	3
Louisiana.						
Donaldsonville				1.57	0 45	14
Franklin		2.53	24-25			
Houma				2.00	0 30	15

Excessive precipitation—Continued.

State and station.	Monthly rainfall 10 inches, or more.	Rainfall 2.50 inches, or more, in 24 hours.		Rainfall of 1 inch or more, in one hour.		
		Amt.	Day.	Amt.	Time.	Day.
Louisiana—Continued.	*Inches.*	*Inches.*		*Inches*	*h. m.*	
Jeanerette		2.73	15	2.73	1 00	15
Lawrence				2.15	0 55	16
Melville		2.50	15			
Oxford				1.18	1 00	12
Paincourtville				1.06	1 00	24
Rayne				1.08	0 30	13
Sugar Experimental Station				1.36	0 45	16
Maine.						
Portland		2.82	24-25	1.16	1 00	25
Maryland.						
Bachmans Valley		3.45	20-21			
Darlington		3.40	19-20			
Fallston	10.41	3.42	5-6			
Do		4.14	20-21			
Frederick		4.56	6			
New Market		3.00	6			
Taneytown		2.90	18-19			
Michigan.						
Birmingham		3.03	5-6			
Harrisville		2.50	16			
Marquette				1.15	1 00	16
Northport		2.50	15-16			
Parkville		2.68	15-16			
Port Huron		2.99	17-18	1.14	0 30	17
Rawsonville		2.60	17			
Minnesota.						
Alexandria				1.12	1 00	15
Bird Island				2.25	0 45	4
Cambridge				2.38	2 00	13
Collegeville		4.16	16			
Long Prairie				1.35	1 15	13
Milan				1.42	1 03	15
St. Cloud		5.00	15-16			
St. Paul		2.98	15	1.13	1 00	15
Mississippi.						
Hazlehurst		3.00	12			
Vicksburg				1.60	1 00	11
Do				1.46	0 45	12
Waynesboro *b*				1.41	1 00	8
Missouri.						
Appleton City		2.53	5			
Arthur		2.54	5			
Do		3.09	9-10			
Boonville		2.90	9-10			
East Lynne		2.59	5			
Edge Hill		3.38	5			
Ironton		3.60	4-5			
Lamar		2.66	4			
Louisiana Bridge		2.98	9-10			
McCune		3.58	9-10			
Neosho		4.20	4-5			
New Hartford		2.50	9-10			
New Palestine				1.00	0 20	9
Olden		3.95	4-5			
Osceola		3.57	5			
Oto		3.25	5			
St. Louis				1.10	1 00	17
Springfield		2.51	4-5			
Stellada		2.54	4-5			
Vermont		3.38	8-9			
Virgil City				1.05	1 00	30
Wheatland		3.27	5			
Do		2.81	9	2.81	2 30	9
Montana.						
Miles City		2.51	16			
Nebraska.						
Creighton				1.64	1 00	8
New Hampshire.						
North Conway		2.80	29			
New Jersey.						
Beverly	10.47	4.06	20-21			
Billingsport	10.07	4.06	21			
Bridgeton	15.61	3.45	18			
Do		4.45	19-20			
Camden	12.38	4.30	20-21			
Cape May		4.31	20-21			
Cape May C. H		2.87	20-21			
Charlotteburg		3.24	28-29			
Egg Harbor City	10.78	5.29	20-21			
Franklinville	12.63	5.10	20-21			
Freehold		2.57	20-21			
Friesburg	12.14	3.30	20-21			
Hammonton	13.58	5.47	20-21			
Imlaystown		3.60	20-21			
Junction		2.80	20-21			
Lambertville	10.91					
Millville	12.16	3.91	20-21			
Moorestown	12.88	5.81	20-21			
Ocean City		3.54	20-21			
Pensauken	11.11	4.22	20-21			
Rancocas	10.66	4.00	20-21			
Ringoes	10.54	3.95	20			
Salem	13.46	3.62	20-21			
Somerville		2.60	20-21			
Trenton	10.75	3.43	20-21			
Vineland	10.39	7.10	20-21			
Woodbine		4.80	20-21			
New York.						
Addison				1.27	1 00	18
Angelica		2.60	19-20			
Arcade	10.05					

Excessive precipitation—Continued.

State and station.	Monthly rainfall 10 inches, or more.	Rainfall 2.50 inches, or more, in 24 hours.		Rainfall of 1 inch, or more, in one hour.		
		Amt.	Day.	Amt.	Time.	Day.
New York—Continued.	*Inches.*	*Inches.*		*Inches*	*h. m.*	
Eden Center	12.02	.....	.....	.....	.....	.....
Friendship	.....	2.67	20	.....	.....	.....
South Canisteo	11.46	.....	.....	.....	.....	.....
North Carolina.						
Greensboro	.....	.....	.....	1.07	1 00	18
Horse Cove	.....	.....	.....	1.04	0 30	17
Raleigh (W. B.)	.....	3.97	18-19	2.28	0 47	18
Raleigh (V. O.)	.....	3.00	18	.....	.....	.....
North Dakota.						
Fort Berthold	.....	.....	.....	1.40	0 40	14
Ohio.						
Ashland	.....	.....	.....	1.89	0 30	17
Bloomingburg	.....	.....	.....	1.01	1 00	15
Bucyrus	.....	3.00	6	.....	.....	.....
Camp Dennison	.....	.....	.....	1.07	1 00	26
Dayton *a*	.....	.....	.....	1.84	0 28	15
Stoutsville	.....	.....	.....	1.00	1 00	6
Oklahoma.						
Buffalo	.....	4.00	30-31	.....	.....	.....
Fort Supply	.....	2.60	30-31	.....	.....	.....
Ponca	.....	.....	.....	1.05	1 00	4
Pennsylvania.						
Altoona	.....	3.64	20	.....	.....	.....
Bloomsburg	10.02	.....	.....	.....	.....	.....
Browers Lock	12.11	4.42	21	.....	.....	.....
Cassandra	14.57	3.00	19	.....	.....	.....
Do	.....	4.13	21	.....	.....	.....
Coatesville	11.72	8.44	19-21	.....	.....	.....
Cooperaburg	14.73	7.12	20-21	.....	.....	.....
Do	.....	3.88	28	.....	.....	.....
Doylestown	11.41	3.97	21	.....	.....	.....
Du Bois	.....	2.78	20	.....	.....	.....
East Mauch Chunk	13.66	8.66	20-21	.....	.....	.....
Emporium	.....	2.92	20	.....	.....	.....
Forks of Neshaminy	14.80	5.40	21	.....	.....	.....
Frederick	10.21	.....	.....	.....	.....	.....
Girardville	12.69	5.76	20-21	.....	.....	.....
Grampian	.....	3.14	19	.....	.....	.....
Hamburg	10.31	5.07	20-21	.....	.....	.....
Hollidaysburg	11.35	3.00	19	.....	.....	.....
Kennett Square	11.54	7.30	20-21	.....	.....	.....
Kilmer	10.00	.....	.....	.....	.....	.....
Lancaster	.....	2.77	20	.....	.....	.....
Landsdale	14.27	7.40	20-21	.....	.....	.....
Lebanon	.....	4.64	20-21	.....	.....	.....
Lewisburg	.....	3.00	19-20	.....	.....	.....
Ottsville	12.92	5.48	21	.....	.....	.....
Philadelphia (W. B.)	.....	3.10	20-21	.....	.....	.....
Philadelphia *b*	12.07	4.55	20-21	.....	.....	.....
Philadelphia *c*	12.07	4.52	20-21	.....	.....	.....
Phœnixville	10.60	4.43	21	.....	.....	.....
Point Pleasant	13.09	4.85	21	.....	.....	.....
Pottstown	12.26	8.18	20-22	.....	.....	.....
Quakertown	15.02	5.94	20-21	.....	.....	.....
Reading	13.34	7.85	20-21	.....	.....	.....
Seisholtzville	13.06	7.39	20-21	.....	.....	.....
Selins Grove	10.03	3.39	20-21	.....	.....	.....
Shinglehouse	.....	2.50	20	.....	.....	.....
Smethport	11.33	3.25	18	1.90	1 15	18
Smiths Corners	13.09	5.64	21	.....	.....	.....
Somerset	14.33	6.90	18-19	.....	.....	.....
State College	.....	2.79	20	.....	.....	.....
Warren	.....	3.20	17	.....	.....	.....
Wellsboro	10.23	3.13	18	.....	.....	.....
West Chester	13.82	9.03	20-21	.....	.....	.....
Westtown	13.40	7.87	20-21	.....	.....	.....
South Carolina.						
McCormick	.....	.....	.....	1.40	1 00	7
St. Stephens	.....	3.16	8	3.16	2 15	8
Tatum Station	.....	.....	.....	1.45	1 00	30
Watts	.....	3.37	7-8	.....	.....	.....
Tennessee.						
Clarksville	.....	.....	.....	1.05	0 30	14
Nunnelly	.....	.....	.....	1.24	0 15	14
Texas.						
Abilene	.....	3.28	9-10	1.62	0 28	31
Arthur City	.....	.....	.....	1.25	1 15	9
Boerne	.....	4.86	10-11	.....	.....	.....
Camp Eagle Pass	.....	3.45	10-11	.....	.....	.....
Duval	.....	2.75	10	1.30	0 20	11
Eastland	.....	4.00	8	4.00	2 00	8
Fort Clark	.....	3.73	10-11	.....	.....	.....
Fort McIntosh	.....	4.00	11	.....	.....	.....
Fort Ringgold	.....	3.00	10-11	.....	.....	.....
Gainesville	.....	.....	.....	1.31	1 00	9
Graham	11.67	6.75	30-31	2.00	2 00	30
Haskell	.....	3.22	31	.....	.....	.....
Hearne	.....	.....	.....	1.00	0 40	12
Hewitt	.....	3.12	12	.....	.....	.....
Highlands	.....	3.60	30-31	1.90	0 50	8
Kyle	.....	2.75	10	.....	.....	.....
Rock Springs	.....	3.48	10-11	.....	.....	.....
Sulphur Springs	.....	.....	.....	1.86	1 20	9
Virginia.						
Dale Enterprise	.....	.....	.....	1.51	1 00	16
Nottoway	.....	.....	.....	1.72	1 00	11
Petersburg	.....	3.46	19	.....	.....	.....
Richmond *a*	.....	2.64	20	.....	.....	.....
Riverton	.....	3.38	19-20	.....	.....	.....
Stephens City	.....	4.65	18-19	.....	.....	.....

Excessive precipitation—Continued.

State and station.	Monthly rainfall 10 inches, or more.	Rainfall 2.50 inches, or more, in 24 hours.		Rainfall of 1 inch, or more, in one hour.		
		Amt.	Day.	Amt.	Time.	Day.
West Virginia.	*Inches.*	*Inches.*		*Inches*	*h. m.*	
Bloomery	.....	3.13	19	.....	.....	.....
Glenville	.....	.....	.....	1.13	0 30	26
Wisconsin.						
Barron	.....	3.00	15	.....	.....	.....
Beaver Dam	.....	3.00	18	.....	.....	.....
Cadiz	.....	.....	.....	1.05	1 00	17
Estella	.....	2.80	15-16	.....	.....	.....
Grantsburg	.....	2.90	14-15	.....	.....	.....
Juneau	.....	2.86	18	.....	.....	.....
Menomonie	10.56	4.80	15-16	.....	.....	.....
Neillsville	.....	3.09	15-16	.....	.....	.....
Osceola	.....	2.65	15	.....	.....	.....
Portage	.....	2.88	17-18	.....	.....	.....
Valley Junction	.....	4.06	15-16	.....	.....	.....

Excessive precipitation received too late for publication in April. 1894.

Texas.						
Corsicana *a*	.....	6.48	29-30	.....	.....	.....
Golindo	11.62	.....	.....	.....	.....	.....
Hewitt	11.15	.....	.....	.....	.....	.....

*April 30-May 1.

MAXIMUM RAINFALL FROM SELF-REGISTERING GAUGES.

The following table gives the heaviest rainfall during May, 1894, for periods of 5, 10, and 60 minutes, as recorded on self-registering rain gauges at regular stations of the Weather Bureau. This record refers strictly to rainfall. About 37 stations are furnished with self-registering float rain gauges and 6 with the self-registering weighing rain and snow gauge. The float gauge does not record snowfall, and both forms are liable to be interrupted by snow and ice:

Maximum rainfall in one hour or less.

Station.	Maximum rainfall in—					
	5 min.	Date.	10 min.	Date.	1 hour.	Date.
	Inch.		*Inch.*		*Inch.*	
Atlanta, Ga	0.22	18	0.30	18	0.45	18
Baltimore, Md	0.25	6	0.45	23	0.80	23
Bismarck, N. Dak.*	.....	.....	.....	.....	.....	.....
Boston, Mass	0.15	19	0.21	19	0.28	19
Buffalo, N. Y.*	0.12	17	0.14	17	0.33	19
Cincinnati, Ohio	0.12	6	0.14	6	0.23	6
Chicago, Ill	0.37	1	0.43	1	0.61	1
Cleveland, Ohio	0.26	18	0.33	17	0.66	17
Denver, Colo.*	0.05	22, 23	0.08	22	0.20	22
Detroit, Mich	0.25	27	0.27	22, 27	0.40	27
Dodge City, Kans	0.02	9, 28	0.04	9, 28	0.17	9
Duluth, Minn	0.12	16	0.16	16	0.45	13
Eastport, Me.*	0.14	2	0.23	2	0.23	2
Galveston, Tex	0.05	12	0.08	12	0.08	12
Indianapolis, Ind	0.42	10	0.53	10	0.81	16
Jacksonville, Fla	0.24	30	0.32	30	0.34	30
Jupiter, Fla	0.20	1, 25	0.35	1	0.95	1
Kansas City, Mo	0.17	10	0.25	10	0.45	10
Key West, Fla.†	0.35	27	0.65	27	1.80	27
Memphis, Tenn	0.25	7	0.40	7	0.85	7
Milwaukee, Wis	0.15	17	0.25	17	0.55	17
Nantucket, Mass	0.06	29	0.10	29	0.25	31
Nashville, Tenn	0.32	10	0.45	10	0.49	10
New Orleans, La	0.15	14, 17	0.25	17	0.42	24
New York, N. Y.*	0.09	6	0.12	24	0.21	24
Norfolk, Va	0.30	23	0.35	23, 30	0.54	30
Omaha, Nebr	0.03	9	0.05	9	0.18	9
Philadelphia, Pa	0.30	28	0.45	28	0.67	28
Portland, Me	0.18	25	0.35	25	1.16	25
Rochester, N. Y	0.20	17	0.40	17	0.76	17
St. Louis, Mo.*	.....	.....	.....	.....	.....	.....
St. Paul, Minn	0.40	15	0.65	15	1.13	15
Salt Lake City, Utah	0.07	22	0.10	22	0.35	22
San Diego, Cal	0.02	15	0.03	15	0.08	15
San Francisco, Cal	0.03	25	0.05	25	0.25	25
Savannah, Ga.*	0.18	10, 18	0.27	10	0.72	18
Seattle, Wash	0.01	15, 20	0.02	15, 20	0.06	15
Vicksburg, Miss	0.45	11	0.85	11	1.60	11
Washington, D. C	0.22	5	0.31	5	0.57	6
Wilmington, N. C.*	0.22	19	0.24	19	0.90	15

*Record incomplete.

FREQUENCY OF EXCESSIVE PRECIPITATION SINCE 1871.

The following tables show the number of years for which monthly precipitation to equal or exceed 10.00 inches, daily

precipitation to equal or exceed 2.50 inches, and hourly precipitation to equal or exceed 1.00 inch has been reported at any regular Weather Bureau station in the several States and Territories for May during the last 24 years:

Frequency of excessive monthly precipitation.

State.	No. years noted.	State.	No. years noted.
Texas	15	Maryland	3
Kansas	10	New Jersey	3
Iowa	7	New York	3
Arkansas	7	Pennsylvania	3
Louisiana	7	Wisconsin	3
Missouri	7	Colorado	2
North Carolina	6	The Dakotas	2
Nebraska	5	District of Columbia	2
Mississippi	5	Indiana	2
Florida	4	Maine	2
Georgia	4	Massachusetts	2
South Carolina	4	Montana	2
Virginia	4	New Hampshire	2
Alabama	4	Kentucky	2
Illinois	3	California	2
Michigan	3	Minnesota	1
Ohio	3	Washington	1
Tennessee	3	Delaware	1

Frequency of excessive daily precipitation.

Kansas	20	Colorado	7
Texas	18	Pennsylvania	7
Alabama	14	Minnesota	6
North Carolina	14	Ohio	6
South Carolina	14	Massachusetts	5
Florida	13	Kentucky	4
Illinois	13	Rhode Island	4
Iowa	12	Montana	4
Mississippi	12	Wisconsin	4
Indian Territory	11	Connecticut	4
Louisiana	11	New Jersey	4
Nebraska	10	New York	4
Arkansas	10	Maine	3
Georgia	10	District of Columbia	2
Tennessee	9	California	2
The Dakotas	9	Delaware	2
Maryland	9	New Hampshire	2
Michigan	9	Oregon	1
Missouri	8	Vermont	1
Virginia	8	West Virginia	1
Indiana	7		

Frequency of excessive hourly precipitation.

Kansas	18	Mississippi	5
Texas	14	Virginia	5
Iowa	12	Indian Territory	4
Nebraska	11	Louisiana	4
Florida	10	Kentucky	4
North Carolina	10	Missouri	4
South Carolina	10	Colorado	3
Pennsylvania	8	Michigan	3
Tennessee	8	Minnesota	3
Georgia	8	Massachusetts	2
Ohio	7	Arizona	1
Maryland	6	Montana	1
Indiana	6	Oregon	1
Illinois	5	Vermont	1
The Dakotas	5	Maine	1
Wisconsin	5	New York	1
Alabama	5	West Virginia	1
Arkansas	5		

EXCEPTIONAL PRECIPITATION.

The following tables give exceptionally heavy monthly, daily, and hourly precipitation reported for May by any station, regular or voluntary, and in any year since 1871:

Exceptional monthly precipitation.

Station and state.	Amt.	Year.	Station and state.	Amt.	Year.
	Inches.			*Inches.*	
Melissa, Tex	34.85	1881	Melissa, Tex	21.95	1873
Weatherford, Tex	27.94?	1884			

Exceptional daily precipitation.

Station and state.	Amount.	Date.	Station and state.	Amount.	Date.
	Inches.			*Inches.*	
Helena, Ark. *a*	10.80	27-28, 1893	Helena, Ark. *b*	9.85	26-28, 1893
Wheeler, Ohio	10.47	16-18, 1893	Fort Wallace, Kans	9.30	22-23, 1874
Columbus, Ga	9.92	22, 1880	Durham, Ark	9.28	1, 1876

Exceptional daily precipitation—Continued.

Station and state.	Amount.	Date.	Station and state.	Amount.	Date.
	Inches.			*Inches.*	
West Chester, Pa	9.03	20-21, 1894	Colebrook, Ohio	5.76	15-17, 1893
New Frankford, Mo	9.00	28-29, 1889	Batesville, Miss	5.75	27, 1893
East Mauch Chunk, Pa.	8.66	20-21, 1894	New Boston, Mo	5.75	25-26, 1893
Coatesville, Pa	8.44	19-21, 1894	Wellsville, Mo	5.73	25-26, 1893
Grampian, Pa	8.37	31, 1889	Dadeville, Mo	5.72	28, 1893
Clarksville, Tex	8.25	10-11, 1874	Ashland, Va	5.70	3, 1893
Pottstown, Pa	8.18	20-22, 1894	Greensburg, Ala	5.67	1, 1893
Hillhouse, Ohio	8.06	16-17, 1893	Smiths Corners, Pa	5.64	21, 1894
Weatherford, Tex	8.00?	21, 1884	Mobile, Ala	5.62	29, 1883
Blue Knob, Pa	7.90	30-31, 1889	Gainesville, Tex	5.61	31, 1892
Lonoke, Ark	7.88	27-28, 1893	Harbor, Ohio	5.60	16-17, 1893
Westtown, Pa	7.87	20-21, 1894	Upper Mattole, Cal	5.59	5-6, 1891
Reading, Pa	7.85	20-21, 1894	Mayport, Fla	5.53	3-4, 1880
Brinkley, Ark	7.65	26-28, 1893	Spartanburg, S. C	5.53	19, 1886
Okolona, Miss	7.50	4, 1887	Hot Springs, Ark	5.52	27-28, 1888
Lansdale, Pa	7.40	20-21, 1894	Mexico, Mo	5.52	25-26, 1893
Seisholtzville, Pa	7.39	20-21, 1894	Ellsworth, N. C	5.50	22, 1880
Shreveport, La	7.37	6, 1876	Clarksville, Tex	5.50	21, 1878
Memphis, Tenn	7.36	26-28, 1893	Cuero, Tex	5.50	29, 1887
Kennett Square, Pa	7.30	20-21, 1894	Houston, Tex	5.50	3, 1884
Coopersburg, Pa	7.12	20-21, 1894	Friendship, N. Y	5.50	30-31, 1889
Vineland, N. J	7.10	20-21, 1894	Smethport, Pa	5.50	31, 1889
McConnellsburg, Pa	7.08	31, 1889	Alum Springs, Va	5.50	30-31, 1889
Osceola, Ark	7.04	31, 1893	Ottsville, Pa	5.48	21, 1894
Wilmington, Del	6.99	20-21, 1894	Hammonton, N. J	5.47	20-21, 1894
Somerset, Pa	6.90	18-19, 1894	Shreveport, La	5.45	21, 1884
Columbia, S. C	6.90	20, 1886	Forks of Neshaminy, Pa	5.41	21, 1894
Hypoluxo, Fla	6.89	29-30, 1890	Osage, Iowa	5.40	23-24, 1880
College Station, Tex	6.85	10-11, 1893	Coudersport, Pa	5.40	31, 1889
Ward District, Colo	6.80	30-31, 1894	Barnegat, N. J	5.39	31, 1878
Graham, Tex	6.75	30-31, 1894	Mountain Spring, Tex	5.38	31, 1892
Charlesville, Pa	6.71	31, 1889	Little Rock, Ark	5.37	26-28, 1893
Denver, Colo	6.70	21-22, 1876	Vicksburg, Miss	5.36	23-24, 1872
Forrest, Ark	6.70	26-28, 1893	Mount Willing, Ala	5.31	1-2, 1893
Strongsville, Ohio	6.67	16-17, 1893	Egg Harbor City, N. J	5.29	20-21, 1894
St. Marys, Ga	6.60	27, 1887	Stanardsville, Va	5.27	2-3, 1893
Petersburg, Pa	6.60	31, 1889	Malvern, Ark	5.26	* 1894
Hallettsville, Tex	6.54	16, 1892	Gold Hill, Colo	5.25	30-31, 1894
Boerne, Tex	6.52	28, 1880	Quincy, Ill	5.25	25-26, 1893
Lynnville, Tenn	6.51	31, 1893	Frederick, Md	5.25	31, 1889
Charleston, S. C	6.38	1-2, 1883	Galveston, Tex	5.24	27-28, 1874
Little Rock, Ark	6.33	9-10, 1882	Dale Enterprise, Va	5.24	30-31, 1889
Tallahassee, Fla	6.30	20, 1888	Luling, La	5.20	24, 1890
Bolar, Va	6.25	30-31, 1889	Eagles Mere, Pa	5.17	31, 1889
Bee Branch, Ark	6.25	27-28, 1893	Fort Snelling, Minn	5.12	31, 1877
Bissells, Ohio	6.23	16-17, 1893	Anderson, S. C	5.12	19, 1886
Grand Coteau, La	6.20	1, 1893	Helena, Ark	5.12	10, 1882
Harrisburg, Pa	6.16	31, 1889	Hollidaysburg, Pa	5.12	31, 1889
Fort Randall, S. Dak	6.13	15, 1872	Franklin, Ky	5.12	31, 1893
North Royalton, Ohio	6.12	17-18, 1893	New Hartford, Mo	5.11	25-26, 1893
Holly Springs, Miss	6.10	26-28, 1893	Eureka Ranch, Kans	5.10	2, 1894
Live Oak, Fla	6.08	4-5, 1890	Franklinville, N. J	5.10	20-21, 1894
Wauseon, Ohio	6.04	29-30, 1889	Centerville, Mo	5.10	13-14, 1892
Weldon, N. C	6.03	10, 1887	Fort Hancock, Tex	5.09	11-12, 1893
Simpsonville, S. C	6.02	25-26, 1890	Atwood, Ill	5.08	25-26, 1893
Glenwood, Iowa	6.00	29, 1878	Lumberton, N. C	5.07	26-27, 1890
West Almond, N. Y	6.00	31, 1889	Hamburg, Pa	5.07	20-21, 1894
Selins Grove, Pa	6.00	31, 1889	Caddo Peak, Tex	5.05	1, 1890
Steffenville, Mo	6.00	25-26, 1893	Ellinwood, Kans	5.03	17-18, 1877
Quakertown, Pa	5.94	20-21, 1894	Nunnelly, Tenn	5.02	31, 1893
Greenville, Ala	5.85	30, 1885	Council Bluffs, Iowa	5.00	31, 1875
Geneva, Nebr	5.85	30-31, 1893	Emory Grove, Md	5.00	15, 1879
Emporium, Pa	5.85	31, 1889	Fort Niobrara, Nebr	5.00	26, 1888
Moorestown, N. J	5.81	20-21, 1894	Palestine, Tex	5.00	2-3, 1884
Tuscarora, Pa	5.81	30-31, 1889	Santee, Nebr	5.00	27, 1875
Waynesboro, Miss. *a*	5.80	6, 1893	Columbia, La	5.00	13, 1890
Girardville, Pa	5.76	20-21, 1894	St. Cloud, Minn	5.00	15-16, 1894

Exceptional precipitation for one hour or less.

Station and state.	Amount.	Time.	Date.
	Inches.	*h. m.*	
Indianapolis, Ind	0.55	0 05	31, 1892
Jacksonville, Fla	0.50	0 05	24, 1893
Jupiter, Fla	0.50	0 05	7, 1891
Detroit, Mich	0.48	0 05	16, 1889
Dodge City, Kans	0.47	0 05	30, 1892
Vicksburg, Miss	0.45	0 05	11, 1894
Jupiter, Fla	0.45	0 05	30, 1893
Kansas City, Mo	0.45	0 05	5, 1892
Galveston, Tex	0.43	0 05	5, 1890
Indianapolis, Ind	0.42	0 05	10, 1894
St. Paul, Minn	0.40	0 05	15, 1894
Norfolk, Va	0.37	0 05	21, 1892
Chicago, Ill	0.37	0 05	1, 1894
Key West, Fla	0.35	0 05	27, 1894
Jupiter, Fla	0.35	0 05	4, 1890
Savannah, Ga	0.35	0 05	27, 1891
Do	0.35	0 05	3, 1890
Cleveland, Ohio	0.32	0 05	31, 1893
Do	0.32	0 05	1, 1892
Nashville, Tenn	0.32	0 05	10, 1894
New Orleans, La	0.30	0 05	19, 1890
Jupiter, Fla	0.30	0 05	31, 1892
Memphis, Tenn	0.30	0 05	27, 1893
Do	0.30	0 05	31, 1893
Tampa, Fla	0.30	0 05	16, 1893
Kansas City, Mo	0.30	0 05	13, 1891

Exceptional precipitation for one hour or less—Continued.

Station and state.	Amount.	Time.	Date.
	Inches.	*h. m.*	
Memphis, Tenn	0.30	0 05	9, 1892
San Francisco, Cal	0.30	0 05	5, 1889
Norfolk, Va	0.30	0 05	23, 1894
Philadelphia, Pa	0.30	0 05	28, 1894
Chicago, Ill	0.28	0 05	31, 1892
St. Louis, Mo	0.28	0 05	26, 1893
Jacksonville, Fla	0.27	0 05	25, 1893
Norfolk, Va	0.27	0 05	26, 1891
Cleveland, Ohio	0.26	0 05	18, 1894
Detroit, Mich	0.25	0 05	5, 1892
St. Louis, Mo	0.25	0 05	18, 1890
Washington, D. C	0.25	0 05	31, 1889
Baltimore, Md	0.25	0 05	6, 1894
Detroit, Mich	0.25	0 05	27, 1894
Memphis, Tenn	0.25	0 05	7, 1894
Norfolk, Va	0.25	0 05	27, 1893
Omaha, Nebr	0.25	0 05	10, 1893
Forestburg, Tex	1.41	0 10	5, 1892
Mount Ida, Ark	1.20	0 10	10, 1882
Vicksburg, Miss	0.85	0 10	11, 1894
Key West, Fla	0.65	0 10	27, 1894
St. Paul, Minn	0.65	0 10	15, 1894
Indianapolis, Ind	0.53	0 10	10, 1894
Davenport, Iowa	0.50	0 10	3, 1888
Oklahoma City, Okla	1.75	0 15	20, 1891
Coatesville, Pa	1.24	0 15	11, 1891
Nunnelly, Tenn	1.24	0 15	14, 1894
Jupiter, Fla	1.15	0 15	30, 1893
Toledo, Ohio	1.10	0 15	20, 1880
La Crosse, Wis	1.04	0 15	3, 1888
Charlotte, N. C	1.32	0 16	12, 1891
Charleston, S. C	1.08	0 17	12, 1883
Cumberland, Md. a	1.69	0 20	25, 1890
Mobile, Ala	1.64	0 20	5, 1879
Fort Riley, Kans	1.50	0 20	14, 1885
Duval, Tex	1.30	0 20	11, 1894
Cincinnati, Ohio	1.14	0 20	14, 1891
Charlotte, N. C	1.00	0 20	3, 1893
New Palestine, Mo	1.00	0 20	9, 1894
Philadelphia, Pa	1.00	0 20	20, 1889
Savannah, Ga	1.60	0 22	26, 1890
Charlotte, N. C	1.60	0 22	26, 1890
Palestine, Tex	1.17	0 23	24, 1888
Concordia, Kans	1.32	0 24	30, 1893
Dayton, Ohio a	1.84	0 28	15, 1894
Abilene, Tex	1.62	0 28	31, 1894
College Hill, Ohio	2.38	0 30	27, 1888
Marshall, Mo	2.08	0 30	29, 1892
Houma, La	2.00	0 30	15, 1894
Mountain Spring, Tex	2.00	0 30	31, 1889
Ashland, Ohio	1.89	0 30	17, 1894
Smithfield, Va	1.80	0 30	31, 1892
Shields, Kans	1.75	0 30	30, 1893
Concordia, Kans	1.50	0 30	30, 1894
Plant City, Fla	1.90	0 35	9, 1893
Cumberland, Md. b	1.75	0 38	25, 1890
Alexandria, S. Dak	3.15	0 45	21, 1893
Fort Riley, Kans	2.70	0 45	13, 1885
Bird Island, Minn	2.25	0 45	4, 1894
Austin, Tex	2.50	0 48	7, 1884
Hot Springs, Ark	3.00	0 50	18, 1891
McCausland, Iowa	3.90	1 00	22, 1890
Rio Grande City, Tex	3.75	1 00	29, 1885
Bolar, Va	3.00	1 00	24, 1890

MONTHLY SNOWFALL.

The depth of snow that fell during the month of May, as reported by both regular and voluntary observers, was not sufficient to necessitate the publication of the usual snow chart, No. V, which is therefore omitted. On the other hand, the actual depth of snowfall and the quantity lying on the ground, as reported at voluntary stations, is shown in the following table. It will be seen that there have been seven principal areas of snowfall, viz:

1. East Kentucky, east Tennessee, and the southern portion of West Virginia, in which region the snowfall ranged from 0.5 to 6.0.

2. Northern Michigan, southeast Wisconsin, and the western portion of southern Wisconsin, in which the snowfall ranged from a trace to 8.0.

3. Central Colorado, in which the snowfall was 0 in the valleys, but was 94 on Pikes Peak.

4. Central Utah, where a few stations report snowfall, the maximum being 10 at Silver Lake.

5. The southwestern portion of Montana, where the maximum snowfall was 16 at Cokedale.

6. Southern California, especially the San Bernardino range of mountains, where the maximum snowfall reported was 5.0.

7. Northeastern California, especially the Sierra Nevada in the neighborhood of Lake Tahoe, where the maximum snowfall reported was 26 at Cisco and 24 at Summit.

Monthly snowfall and amounts on ground on the 15th and at close of month.

State and station.	Total.	15th.	31st.
Arkansas.	*Inches.*	*Ins.*	*Ins.*
Corning	T.	.....	.....
California.			
Adin	1.0	0.0	0.0
Cisco	26.0	0.0	0.0
Deep Creek	3.0	0.0	0.0
Edmanton	3.0	3.0	0.0
Emigrant Gap	16.0	0.0	0.0
Girard	1.0	0.0	0.0
Green Valley	3.0	0.0	0.0
Iowa Hill	T.	0.0	0.0
La Porte	8.0	14.0	0.0
Lick Observatory	4.0	0.0	0.0
Little Bear Valley	3.0	0.0	0.0
Little Bear V'y (near)	3.2	0.0	0.0
Lower Holcomb Valley	1.5	0.0	0.0
Morses House	5.0	0.0	0.0
Nevada City	1.5	1.5	0.0
Squirrel Inn	2.5	0.0	0.0
Summit	24.0	0.0	0.0
Susanville	T.	0.0	0.0
Tehachapi b	2.5	0.0	0.0
Colorado.			
Breckenridge	12.9	30.0	30.0
Climax	3.0	0.0	0.0
Coma (near)	9.3	0.0	0.0
Deer Trail	T.	0.0	0.0
Divide Ex. Station	1.0	0.0	0.0
Dumont	4.0	0.0	0.0
Gold Hill	15.2	0.0	0.0
Husted	T.	0.0	0.0
Moraine	12.0	0.0	0.0
Pikes Peak	94.2	T.	60.0
Rico	2.1	0.0	0.0
Smoky Hill Mine	6.0	0.0	0.0
Stamford	8.5	0.0	0.0
Steamboat Springs	T.	0.0	0.0
Sunnyside	33.9	0.0	0.0
Idaho.			
Atlanta	3.0	36.0	0.0
Grangeville	2.5	0.0	0.0
Idaho Falls	T.	0.0	0.0
Salubria	T.	0.0	0.0
Illinois.			
Chicago	T.	0.0	0.0
Griggsville	T.	0.0	0.0
Rantoul	T.	0.0	0.0
Riley	T.	0.0	0.0
Winnebago	1.0	0.0	0.0
Indiana.			
Angola	0.5	0.0	0.0
Huntington	T.	0.0	0.0
Indianapolis	T.	0.0	0.0
Jeffersonville	T.	0.0	0.0
Kokomo	T.	0.0	0.0
Marengo	T.	0.0	0.0
Marion	T.	0.0	0.0
Markle	1.5	0.0	0.0
Mauzy	T.	0.0	0.0
Vevay	T.	0.0	0.0
Iowa.			
Dubuque	T.	0.0	0.0
Kentucky.			
Burnside	3.0	0.0	0.0
Carrollton	T.	0.0	0.0
Eubank	3.0	0.0	0.0
Greendale	3.5	0.0	0.0
Harrodsburg	6.0	0.0	0.0
Hendricks	1.0	0.0	0.0
Lexington	6.0	0.0	0.0
Louisa	T.	0.0	0.0
Louisville	T.	0.0	0.0
Middlesboro	T.	0.0	0.0
Richmond	4.0	0.0	0.0
Sandy Hook	2.0	0.0	0.0
Shelby City	3.0	0.0	0.0
Shelbyville	4.0	0.0	0.0
South Fork	5.0	0.0	0.0
Springfield	5.0	0.0	0.0
Williamsburg	0.4	0.0	0.0
Maine.			
Houlton	T.	0.0	0.0
Michigan.			
Albion	T.	0.0	0.0
Allegan	T.	0.0	0.0
Alma	T.	0.0	0.0
Alpena	5.0	0.0	0.0
Ann Arbor	T.	0.0	0.0
Arbela	T.	0.0	0.0
Bear Lake	1.0	0.0	9.0
Berlin	0.5	0.0	0.0
Boon	4.0	0.0	0.0
Calumet	1.0	0.0	0.0
Escanaba	T.	0.0	0.0
Fitchburg	1.5	0.0	0.0
Flint	T.	0.0	0.0
Grand Haven	0.2	0.0	0.0
Grayling	8.0	0.0	0.0
Hanover	T.	0.0	0.0
Harbor Springs	T.	0.0	0.0
Harrison	3.0	0.0	0.0
Harrisville	T.	0.0	0.0
Hart	0.5	0.0	0.0

State and station.	Total.	15th.	31st.
Michigan—Cont'd.	*Inches.*	*Ins.*	*Ins.*
Kalamazoo	T.	0.0	0.0
Lansing	T.	0.0	0.0
Lathrop	1.0	0.0	0.0
Lewiston	7.0	0.0	0.0
Lodi	2.0	0.0	0.0
Marquette	4.2	0.0	0.0
Mottville	T.	0.0	0.0
Old Mission	7.0	0.0	0.0
Olivet	T.	0.0	0.0
Parkville	T.	0.0	0.0
Rawsonville	T.	0.0	0.0
Rockland	1.0	0.0	0.0
St. Ignace	T.	0.0	0.0
Stanton	T.	0.0	0.0
Thornville	T.	0.0	0.0
Ypsilanti	T.	0.0	0.0
Missouri.			
Princeton	T.	0.0	0.0
Montana.			
Butte	1.0	0.0	0.0
Cokedale	16.0	2.0	0.0
Fort Custer	0.3	0.0	0.0
Fort Logan	12.0	2.0	0.0
Havre	T.	0.0	0.0
Helena	T.	0.0	0.0
Marysville	5.4	0.0	0.0
Red Lodge	0.2	0.0	0.0
Virginia City	3.5	0.0	0.0
White Sulphur Springs	7.0	0.0	0.0
Nevada.			
Austin	12.0	0.0	0.0
Battle Mountain	12.0	2.0	0.0
Belleville	0.6	0.6	0.0
Belmont	1.0	1.0	0.0
Candelaria	3.0	3.0	0.0
Ely	T.	T.	0.0
Lewers Ranch	0.2	0.2	0.0
Palmetto	6.0	6.0	0.0
Paradise	T.	T.	0.0
Sunnyside	3.0	3.0	0.0
Tybo	0.5	0.5	0.0
Virginia City	1.5	0.0	0.0
Winnemucca	0.5	0.0	0.0
New Jersey.			
Asbury Park	T.	0.0	0.0
Boonton	T.	0.0	0.0
New York.			
Buffalo	T.	0.0	0.0
Humphrey	T.	0.0	0.0
Rome	0.5	0.0	0.0
North Carolina.			
Asheville	T.	0.0	0.0
Bakersville	T.	0.0	0.0
Blowing Rock	T.	0.0	0.0
Columbus	T.	0.0	0.0
Horse Cove	T.	0.0	0.0
North Dakota.			
McKinney	0.1	0.0	0.0
Williston	2.0	0.0	0.0
Ohio.			
Benton Ridge	T.	0.0	0.0
Cherry Fork	0.3	0.0	0.0
Clarksville	T.	0.0	0.0
Cincinnati	T.	0.0	0.0
Cynthiana	T.	0.0	0.0
Findlay	T.	0.0	0.0
Jacksonboro	T.	0.0	0.0
Montpelier	T.	0.0	0.0
New Bremen	T.	0.0	0.0
New Holland	T.	0.0	0.0
Orangeville	T.	0.0	0.0
Ripley	2.0	0.0	0.0
Vanceburg	3.0	0.0	0.0
Van Wert	T.	0.0	0.0
Wauseon	0.4	0.0	0.0
Oregon.			
Baker City	T.	0.0	0.0
Crook	2.0	0.0	0.0
Fife	2.0	2.0	0.0
Happy Valley	3.3	0.0	0.0
Siskiyou	7.0	0.0	0.0
Pennsylvania.			
Cassandra	T.	0.0	0.0
Le Roy	T.	0.0	0.0
South Dakota.			
Fort Meade	T.	0.0	0.0
Tennessee.			
Andersonville	2.0	0.0	0.0
Covington a	T.	0.0	0.0
Franklin	T.	0.0	0.0
Greeneville	T.	0.0	0.0
Jacksboro	T.	0.0	0.0
Knoxville	T.	0.0	0.0
Nashville	T.	0.0	0.0
Pikeville	1.0	0.0	0.0
Rugby	2.0	0.0	0.0
Springdale	T.	0.0	0.0
Utah.			
Coalville	1.0	0.0	0.0
Glendale	1.0	0.0	0.0
Levan	T.	0.0	0.0
Mount Pleasant	1.0	0.0	0.0

Snowfall of 10 *inches or more*—Continued.

State and station.	Total.	15th.	31st.
Utah—Cont'd.	*Inches.*	*Ins.*	*Ins.*
Scofield	1.0	0.0	0.0
Silver Lake	10.0	30.0	0.0
Singletree	0.5	0.5	0.0
Virginia.			
Marion	T.	0.0	0.0
Washington.			
Silver Creek	T.	0.0	0.0
Spokane	T.	0.0	0.0
West Virginia.			
Beverly	T.	0.0	0.0
Bluefield	2.0	0.0	0.0
Elkhorn	T.	0.0	0.0
Madison	T.	0.0	0.0
Raleigh	0.5	0.0	0.0
Wisconsin.			
Antigo	T.	0.0	0.0
Beaver Dam	2.0	0.0	0.0
Delevan	T.	0.0	0.0
Wisconsin—Cont'd.	*Inches.*	*Ins.*	*Ins.*
Fond du Lac	1.0	0.0	0.0
Green Bay	T.	0.0	0.0
Harvey	0.2	0.0	0.0
Hillsboro	0.2	0.0	0.0
Juneau	2.0	0.0	0.0
Lincoln	0.2	0.0	0.0
Madison	T.	0.0	0.0
Manitowoc	2.0	0.0	0.0
Milwaukee	T.	0.0	0.0
Reedsburg	1.0	0.0	0.0
Sharon	T.	0.0	0.0
Shawano	1.0	0.0	0.0
Wyoming.			
Big Horn Ranch	1.1	0.0	0.0
Camp Pilot Butte	T.	0.0	0.0
Cheyenne	T.	0.0	0.0
Fort Yellowstone	7.2	0.0	0.0

DEPTH OF SNOW ON GROUND.

The depth of unmelted snow lying on the ground at 8 p. m. of May 31st was too small and irregularly distributed to warrant the publication of a special chart, but the depth is given in figures in connection with the monthly snowfall given in the preceding table. On the 31st the following places only reported snow lying on the ground:

Colorado.—Breckenridge, 30 inches; Pikes Peak, 60 inches.

HAIL.

The description of the more severe hailstorms of the month is given under "Local storms." The following are the dates on which hail fell in the respective States:

Alabama, 7, 8, 10, 11, 18. Arizona, 29. Arkansas, 1, 3, 7, 8, 26, 27. California, 14, 18, 26, 31. Colorado, 3, 9, 11, 22, 23, 25, 26, 29, 30, 31. Delaware, 24, 27. 28. District of Columbia, 18. Florida, 10, 26, 30, 31. Georgia, 7, 10, 16, 18, 25, 26. Idaho, 1, 12, 17, 26. Illinois, 1, 5, 6, 7, 8, 10, 13, 16, 17, 18, 20, 24, 25, 27. Indiana, 3, 4, 6, 7, 10, 14, 15, 17, 19, 20, 25, 26, 27. Indian Territory, 8, 15. Iowa, 1, 2, 3, 4, 5, 6, 11, 19, 24, 28. Kansas, 2, 4, 8, 9, 13, 27, 28, 29, 30. Kentucky, 6, 7, 11, 13, 14, 15, 19, 26, 27, 31. Louisiana, 11, 14, 15, 18, 24. Maine, 7. Maryland, 6, 17, 18, 24, 26, 31. Massachusetts, 4, 19. Michigan, 1, 6, 10, 14, 16, 17, 18, 24, 26, 27, 29, 30, 31. Minnesota, 2, 4, 5, 6, 9, 10, 13, 14, 15, 16, 17, 26. Mississippi, 2, 11, 18. Missouri, 2, 3. 4, 5, 6, 7, 9, 10, 16, 17, 18, 25, 26, 27, 29. Montana, 13, 14, 20, 21, 27, 28, 29.

Nebraska, 2, 5, 8, 9, 12, 29. Nevada, 8, 14, 15, 18, 31. New Hampshire, 7. New Jersey, 6, 7, 17, 26, 28. New Mexico, 23, 25, 29, 30, 31. New York, 6, 7, 18, 21, 27, 30, 31. North Carolina, 2, 4, 5, 7, 18, 19, 23, 26, 27, 28, 29, 30, 31. North Dakota, 5, 6, 9, 10, 16. Ohio, 6, 10, 14, 15, 16, 17, 18, 21, 23, 24, 25, 26, 27, 29, 30, 31. Oklahoma, 3, 7, 25. Oregon, 1, 24, 25, 26, 27, 30. Pennsylvania, 5, 6, 16, 17, 18, 19, 20, 23, 26, 28, 31. South Carolina, 5, 7, 9, 16, 17, 18, 23, 30. South Dakota, 1, 5, 16. Tennessee, 3, 4, 7, 9, 10, 14, 18. Texas, 2, 5, 8, 9, 23, 24, 26, 28, 30. Utah, 8, 9, 21, 29, 30. Vermont, 29. Virginia, 4, 5, 6, 10, 13, 16, 18, 23, 24, 25, 26, 27, 28. West Virginia, 5, 6, 18, 232, 4, 26, 28, 29, 31. Wisconsin, 1, 2, 5, 6, 13, 14, 15, 16, 17, 26.

SLEET.

A description of the more severe sleetstorms of the month is given under "Local storms." The following are the dates on which sleet occurred in the respective States:

California, 15. Colorado, 23, 30. Georgia, 19. Illinois, 20. Indiana and Kentucky, 19, 20. Michigan, 18, 19, 27, 29, 30. Minnesota, 6. Montana, 6, 9, 15. Nevada, 14, 15. North Dakota, 2. Ohio, 18, 19. Tennessee, 19. Utah, 15. Virginia and West Virginia, 19. Wisconsin, 17, 18.

PRECIPITATION AS AFFECTING AGRICULTURE.

The following records of precipitation as affecting agriculture are taken from newspapers and official reports of the State Weather Services:

Alabama.—The month as a whole was rather dry, and while a dry May has never been known to inflict any serious injury on crops in this section, the high winds that prevailed during the latter half of the month baked the ground very hard, retarding farming operations.

Arkansas.—The deficiency of rainfall was very favorable for cultivating and cleaning crops, but was rather detrimental to the growth of vegetables and grasses, and in a great many localities was so injurious to oats that they were entirely ruined, the straw being too short and the grain too light to pay for harvesting. At the close of the month cotton, corn, and wheat were generally doing very well and promising a good crop.

Georgia.—Owing to the long period of deficient rainfall, the soil has become very dry and crops are beginning to suffer in many localities.

Indiana.—The latter part of the month cold rains checked the advancement of the crops. At Patriot a violent hailstorm destroyed all vegetation; it fell three inches deep.

Iowa.—The most damaging condition as regards the crops has been the unprecedented drought prevalent through the greater part of May.

Louisiana.—Where rain fell crop conditions are reported very favorably, cane, corn, cotton, and rice were greatly benefited thereby, and the planting of sweet potato slips was made possible.

Michigan.—General and heavy rains occurred at the beginning of the month and continued until after the 20th, keeping the ground well soaked for more than three weeks. Such weather was favorable to the growth of wheat, and the average condition June 1 is reported as 92 per cent as compared with 77 in 1893, 91 in 1892, and 96 in 1891. The average condition this year is higher than in any previous year of which we have record, excepting 1891. The heavy and continued rains interfered with the planting of corn, and a much larger area than usual remained to be planted June 1, and of that planted early more than an average amount had to be replanted. The reports indicate, however, that the acreage of this crop will not be less than in average years.

Missouri.—In the northwestern portion of the State the month was unusually dry, stock water became scarce, wells and cisterns failed in some localities, pastures and meadows dried up, and all crops suffered to a greater or less extent from the drought.

Nebraska.—Drought has prevailed over most of the State, and crops of all kinds have suffered therefrom.

Nevada.—At the close of the month some portions of Nye County were suffering for want of rain, but in nearly all other localities sufficient rain or snow fell to insure good crops.

New England.—The first half of the month was extremely dry in all districts, and crops and springs suffered, but during the last half an excess of moisture came. The ground was filled with water, making lowlands very wet, and in some instances the crops were under water or in the mud. Much seed rotted in the ground and replanting was necessary.

New Jersey.—Bridgeton: the rainfall from the 18th to the 31st, inclusive (13.74 inches), is the greatest on record at this place; cellars full of water and crops retarded. Dover: vegetation suffered severely from drought up to the 18th, but excessive rains continued from that time.

North Carolina.—During the first warm period the rainfall was insufficient in amount and crops at very many places suffered from drought considerably.

North Dakota.—Power, Richland Co.: the month as a whole has been very dry, though the crops are all growing well. Pasturage fair, but meadows not up to the average. Everything considered, conditions are really good for a better crop than an average.

Oklahoma.—The rains were generally sufficient for agricultural purposes and the month closes with crops in good condition. Arapahoe: plenty of rain and the month closes with the ground in the best possible condition and crops growing fast.

Pennsylvania.—The rainfall was light during the first half of the month, and although general rains occurred on the 5th, 6th, and 7th, the quantity was small, and by the middle of the month, crops were beginning to suffer from want of moisture. General rains occurred on the 17th and 18th, becoming heavy on the 19th and excessive on the 20th and 21st. Agricultural interests suffered severely from the excessive rains of the 21st and 22d; many farms along the rivers and streams were completely inundated, crops washed out, and the land left covered with deposits of mud and foreign matter. Numerous farms not subject to the overflow of streams were badly washed, lowlands flooded, growing crops injured by washouts and washings from hill sides, seeds rotted in the ground from cold and excessive moisture, and farm work delayed by the muddy and saturated condition of the soil. Yorkana, York Co.: Mr. Gerard C. Brown, under date of May 20, says:

"Since the 26 inches of snowfall of April 11–12 we have had five weeks of practically rainless weather, one little shower evening of May 6 to just lay the dust. Results are, that our hay crop is already gone up; clover in blossom, 6 inches high and very scattering. June grass, *poa pratensis*, spindling and maturing. Oats scarcely cover the ground; corn coming up very irregularly; many potato fields planted a month ago do not show the rows; impossible to put tobacco ground in order; gardens watered for past fortnight; all this in the first two weeks of May. Old people here say they have never paralleled it.

"Winds recently are northwest and very parching, although light and baffling, we not only get no showers, but no clouds and yet very little, if any, dews are perceptible in early morning."

South Dakota.—From the 7th to 31st the rainfall is insufficient generally, except in the Black Hills region, and affected crops adversely, but not very seriously.

Tennessee.—At the close of the month all crops were suffering from the combined effects of dry and cool weather.

Texas.—Cotton was damaged considerably in a few localities in Eastland and Comanche counties by heavy hail on 8th, but the precipitation was generally beneficial to the crop; maize was also slightly damaged by the excessive rain and hail of the 8th; the showers at the close of May were generally beneficial to the oat crop, especially those sown late, and improved the crop considerably.

Utah.—The month was unusually dry; the drought was most severely felt in the southern part of the Territory, where it hindered the growth of crops and dried up the cattle ranges.

Virginia.—While there were numerous local showers during the first half of the month, yet, on account of the deficiency during April, the drought became quite severe over the greater portion of the State, except the extreme northern, so that all growing crops were seriously injured and corn planting delayed until general and heavy rains on the 18th to 20th.

Washington.—The unusually warm weather during the latter part of the month melted the snow in the mountains rapidly, causing serious freshets in nearly all the principal rivers of the State, which have almost completely destroyed the crops planted on the lowlands, but notwithstanding vegetation made good growth.

Wisconsin.—Rainfall largely in excess in the northwest and north-central counties, while southwest and south-central counties show a deficiency. The month proved generally favorable to small grain and not too severe for the life of corn and potatoes.

WIND.

PREVAILING WINDS.

The prevailing winds for May, 1894, viz, those that were recorded most frequently at Weather Bureau stations, are shown in Tables I and VIII; they are not given on Chart II, as has hitherto been the custom, but in lieu thereof the resultant winds are published.

RESULTANT WINDS.

The resultants for the current month, as deduced from the hourly records of winds, by self-registers at about 67 regular Weather Bureau stations, are given in Table VIII. Other resultants, deduced from the personal observations made at 8 a. m. and 8 p. m. at all stations that appear on the morning and evening maps of the Weather Bureau, are given in Table IX. These latter resultants are also shown graphically on Chart II, in connection with the isobars based on the same system of simultaneous observation; the small figure attached to each arrow shows the number of hours that this resultant prevailed, on the assumption that each of the morning and evening observations represents one hour's duration of a wind of average velocity; these figures (or the ratio between them and the total number of observations in this month) indicate the extent to which winds from different directions counterbalance each other. The original north, south, east, and west components, on which these resultants are based, are given in detail in Table IX for convenience in making further studies.

During May the resultant movement from the southwest prevailed in New England, the south Atlantic States, the lower Lakes, Ohio Valley and Tennessee, and the northern plateau region; from the southeast in the western Gulf States and the southern slope region; northerly winds in the upper Lake region and North Dakota; while elsewhere the resultant winds were generally southwest or northwest. The strongest resultants were at Corpus Christi from the southeast, and at San Francisco from the southwest.

HIGH WINDS.

Wind velocities of 50 miles, or more, per hour were reported at regular stations of the Weather Bureau as follows (maximum velocities are averages for 5 minutes; extreme velocities are gusts of shorter duration):

Stations.	Date.	Velocity.	Direction.	Stations.	Date.	Velocity.	Direction.
		Miles.				Miles.	
Amarillo, Tex	4	60	s.	Chicago, Ill	5	52	se.
Do	15	50	s.	Do	18	62	e.
Bismarck, N. Dak.	10	54	ne.	Huron, S. Dak.	11	63	s.
Cheyenne, Wyo.	5	50	nw.	Pikes Peak, Colo	15	77	sw.
Do	10	50	w.	Tatoosh Island, Wash.	18	50	e.
Chicago, Ill.	1	60	sw.	Do	23	57	ne.
Do	3	62	sw.	Williston, N. Dak	14	52	w.

LOCAL STORMS.

1st.—About 9.10 p. m. a windstorm of short duration passed over the eastern portion of Toledo, Ohio, causing damage to the amount of about $500. At Waukesha, Wis., a severe windstorm blew down barns.

2d.—A thunderstorm moving northeast occurred at Eastport, Me., between 2.27 and 4.50 p. m.; the tower of the public library was struck by lightning and slightly damaged. In Winston County, Miss., a horse was killed by lightning. At 5.45 p. m. a violent local storm, with a funnel-shaped cloud, moved northeast over Ebson, Kans., in a path about 1 mile wide, injuring 1 person and destroying property valued at $4,000. An exceptionally heavy rain and hail storm visited Eureka Ranch, Kans., about 4.30 p. m., and continued until 9.30 p. m.; gardens and fruit were damaged.

3d.—During a windstorm at Franklin, Ky., in the evening, damage was caused to buildings. At Cincinnati, Ohio, a house was destroyed by lightning. A thunderstorm of short duration passed over Chicago, Ill., about 4.13 p. m.; a house was blown down killing one person.

4th.—Thunder and hail storms caused damage in Missouri and Kansas. At Half Way, Mo., a horse was killed by lightning. In the north part of Coffey County, Kans., damage was caused by hail. A heavy hailstorm was reported at Gordon, Douglas Co., Wis., destroying gardens and glass.

5th.—At Lancaster, Pa., a house was struck by lightning. A man was killed by lightning at Columbus, N. C. At Little Mountain, S. C., a number of trees were struck by lightning. At Prosperity, about 7 miles west of Little Mountain, a house was struck by lightning. High winds caused minor damage at Louisville, Ky. Severe storms were reported in Illinois, Wisconsin, Iowa, and Minnesota. At Chicago, Ill., a thunderstorm began at 9.35 p. m., and continued until past midnight; a church was blown down and a house struck by lightning. Three buildings were struck by lightning at Oconomowoc, Wis. At Stevens Point, Wis., a barn was struck by lightning. A hailstorm caused damage to glass and minor damage to crops at Amana, Iowa. Sixteen miles south of Centerville, Iowa, damage was caused by high wind. A severe hailstorm visited Iowa City, Iowa, about 5 p. m.; the stones were about 2 inches in diameter, some having an opaque center, apparently of snow, and others like transparent layers of ice; the damage was estimated at $25,000. About 6.30 p. m. a severe local storm, moving east, passed about 4 miles southwest of Moravia, Iowa, in a path 100 to 300 yards wide; one person was killed and property demolished. The storm passed about one-fourth of a mile north of Bloomfield, Iowa, where the path was about 14 miles wide; at this point a funnel-shaped cloud was observed; one person was killed, and the estimated damage placed at $25,000. A severe storm, with a funnel-shaped cloud, occurred about 3½ miles south of Foreston, Minn., at 3 p. m.; as the storm passed through an uninhabited part of the country no damage was caused, except to timber.

6th.—Thunder and wind storms occurred in the middle Atlantic States and the Ohio Valley and Tennessee. In Pennsylvania the storms were very severe, and considerable damage was done to property and crops. At Bachmans Val-

ley, Md., a rainstorm, attended by thunder, caused great damage to corn fields. Hail damaged vegetables and grain at Fenby, Md. At Taneytown, Md., a heavy thunder and rain storm damaged corn. Barns and trees were blown down at Upper Marlboro, Prince George Co., Md. In the vicinity of Woodstock, Md., exceptionally heavy rain caused washouts on railroads and damaged a large bridge. The storm did considerable damage along the line of the Baltimore and Ohio Railroad in Maryland; in many places the railroad tracks were inundated, and at some points washed away. A thunderstorm occurred at Stephens City, Va., accompanied by a light fall of hail; buildings were damaged by high wind and stock killed by lightning. Damage was done to buildings by a heavy thunder and wind storm at Buckhannon, W. Va. At Central City, W. Va., a thunderstorm moved northeast, with heavy rain after; the estimated damage to property was $7,000. Damage was done by heavy rain and high wind at Thurman, Ohio. Heavy storms at Lincoln and Gentryville, Ind., blew down buildings and killed stock. A house was struck by lightning at Detroit, Mich., in the early morning.

7th.—At Water Valley, Miss., a thunderstorm, lasting fifteen minutes, caused damage of a minor character. A report from Alpena, Mich., states that during a gale a yacht went ashore on Thunder Bay Island, and at Thompsons Harbor, 25 miles north of Alpena, a schooner was reported ashore. High wind at Duluth, Minn., and West Superior, Wis., caused damage of a minor character.

8th.—Damage to the amount of $4,000 was caused by a heavy thunderstorm at Solomons, Md. About 6.30 p. m. a destructive hailstorm passed over Eastland and Comanche Counties, Tex., in a path about 8 miles wide and 20 miles long, causing damage to crops. A heavy rain and wind storm moved southeast over Wichita Falls, Tex., about 5 p. m.; damage to property, $2,000.

9th.—A severe storm, with hail, lasting one hour, visited Port Tampa, Fla.; glass on the south side of buildings was damaged and a number of telegraph poles were blown down. A heavy rain storm washed away bridges at McCune Station, Mo. At Wheatland, Mo., a horse was killed by lightning. A heavy rainstorm, with high wind, moved northeast over Stillwater, Minn., between 5 and 6.30 p. m.; one person was killed and property destroyed to the value of $25,000. Wheat was destroyed 2 miles north of Dodge City, Kans.

10th.—An unusually severe rainstorm, with hail, occurred 2 miles south of Adairsville, Ga., in the evening; bridges were washed away. In the vicinity of Clarksville, Tenn., several places were struck by lightning. A norther, with heavy rain and hail, struck Rock Springs, Tex., about 4 p. m.; damage was caused by high wind. At Indianapolis, Ind., a rainstorm moved northeast at 4.45 p. m.; the rain was very heavy from 5.02 to 5.11 p. m., 0.50 inch falling in five minutes, accompanied by a strong southwest wind and thunder and lightning. At 5.05 p. m. the temperature dropped from 83° to 59° in a few minutes, and at the same time the barometer rose suddenly about 0.17 inch. An infant was killed by a falling brick, and minor damage was done to property. At Detroit, Mich., high wind from 8.34 p. m. to midnight blew down trees.

11th.—Birmingham, Ala., a heavy windstorm blew down trees. A thunderstorm, with heavy hail, occurred at Port Tampa, Fla., in the early morning; glass was broken by the hail and damage was caused by high wind. At Vicksburg, Miss., a thunderstorm moved northeast between 6.40 and 9.40 p. m.; hail fell for nearly half an hour, causing considerable damage. High wind damaged crops at Long Prairie and Milan, Minn.

13th.—Damage was caused by lightning and hail near Lynchburg, Va. A house was struck by lightning at Montgomery, Ala. A heavy rain and hail storm caused damage at Henning, Minn. At Vale, Oreg., a horse was killed by lightning.

14th.—Heavy rain at Old Fort, N. C., caused considerable damage to crops. A man and a horse were killed by lightning at Louisville, Miss. Five miles west of Opelousas, La., a man and a horse were killed by lightning. During a heavy windstorm near Milfordton, Ohio, damage was done to fences and trees. Buildings were damaged by high wind in the southern part of Douglas County, Minn. A thunder and hail storm of short duration visited Fresno, Cal., in the early evening, causing damage to fruit and grain. In the mountains, on the east side of Fresno County, the storm was reported very severe, and over 4,000 sheep were frozen to death.

15th.—Heavy rain and thunder storms occurred in Illinois, Indiana, Wisconsin, and Minnesota. At Chicago, Ill., a thunderstorm moved east between 1.30 and 3.17 p. m.; 2 persons were stunned and considerable damage was done to property by lightning. Two houses were struck and stock killed by lightning at Delphi, Ind. At Markle, Ind., crops were damaged by hail. In the early morning a barn was struck by lightning and burned at Veedersburg, Ind. About 6.30 p. m., Bloomer, Wis., was visited by a heavy thunder and rain storm, which moved southwest, damaging buildings and crops. Two houses were struck by lightning and burned at Menomonie, Wis. A heavy rainstorm, accompanied by hail, moved northeast over Prescott, Wis., between 5.30 and 6.30 p. m.; damage was done by flood. Heavy rain in southeastern Minnesota and northwestern Wisconsin delayed railroad traffic. Damage was caused by lightning at Sauk Center, Minn. At Paonia, Colo., high wind damaged fruit. A wind storm at Show Low, Ariz., blew down trees.

16th.—A severe hailstorm at Pinopolis, S. C., caused damage to crops. Minor damage was caused by a thunderstorm at Indianapolis, Ind., in the early morning. Exceptionally heavy rainstorms occurred in Michigan, Wisconsin, and Minnesota. At Menomonie, Wis., a house was struck by lightning. A house was struck by lightning at Stevens Point, Wis. During a thunder and rain storm in the early morning at St. Paul, Minn., 2 houses were struck by lightning and washouts on railroads delayed traffic.

17th.—Severe local storms occurred in Ohio, and heavy wind and thunder storms in Indiana, Illinois, Michigan, and Wisconsin, in accordance with the official prediction. (See low area No. V.) A heavy thunderstorm, with hail and high wind, moved southeast over Alliance, Ohio, at 4.30 p. m., causing damage to the extent of $500. A very severe thunderstorm, with unusually large hail, moved northeast over Cleveland, Ohio, from 3.20 to 6 p. m.; the hail fell for twenty-one minutes causing considerable damage. At Green Hill, Ohio, a hailstorm damaged glass, fruit, and wheat. About 4.30 p. m. a tornado moved east about 2 miles north of Montpelier and one-half mile south of Kunkle, Ohio; a funnel-shaped cloud was observed, and the storm was attended by thunder and lightning and unusually large hail; 4 persons were killed and the damage to property was estimated at $6,000. A violent storm, moving northeast, with a funnel-shaped cloud, heavy rain, hail, thunder, and lightning swept over Navarre, Ohio, about 4 p. m.; a number of persons were injured by hail and damage was done to buildings. At Delphi and Mauzy, Ind., high wind damaged trees. At Elwood, Ind., a heavy thunder and wind storm, moving northeast, blew down 2 houses.

A thunderstorm, attended by hail, moved east in a path about 200 feet wide over Noblesville, Ind., causing damage to the extent of $8,000. About 8 a. m. a heavy windstorm, moving southeast, visited Wellsboro, Ind.; a building was blown down, killing one person. At Chicago, Ill., a thunderstorm began at 6.58 and ended at 8.50 p. m.; several persons

were injured and buildings damaged by lightning. Damage by hail was reported at Riley, Ill. A hailstorm caused damage at Allegan, Mich. In the early morning a house was struck by lightning at Alpena, Mich. At Bronson, Mich., cattle were killed by lightning. A windstorm, moving south, caused damage to the extent of about $1,000 at Emmet, Mich. At Port Huron, Mich., the most severe thunder and hail storm reported in years moved southwest between 4.30 and 11.30 p. m.; the temperature dropped from 80° to 48°; considerable damage was done by hail. Some damage was caused by hail at Sharon, Wis.

18th.—Destructive thunderstorms occurred in New Jersey, Maryland, District of Columbia, Virginia, and West Virginia. At Solomons, Calvert Co., Md., a heavy storm of thunder and hail caused damage to growing crops. A barn was struck by lightning at Benedict, Md. At 3.15 p. m. a severe thunderstorm, moving east, passed over Washington, D. C.; hail fell for a short time; the wind reached a maximum velocity of 47 miles per hour, damaging trees. A heavy hailstorm damaged vegetables and wheat at Stephens City, Va. A thunderstorm, lasting about twenty minutes and accompanied by high wind and hail for three minutes, occurred at Parkersburg, W. Va., in the afternoon; the temperature dropped 24°; many trees were blown down and houses unroofed. In the afternoon a thunder and wind storm moved east over Augusta, Ga.; three small houses in course of erection were blown down. At 3.35 p. m. a heavy southwest squall struck Jacksonville, Fla., causing several accidents. Cotton and corn were damaged by hail at Opelika, Ala. In accordance with official predictions, violent gales prevailed over the Great Lakes, attended by loss of life and a number of disasters to shipping. (See low area No. V.) Severe local storms occurred on the 18th on Lake Michigan.

At Chicago, the most severe storm in the history of the station began at 7.30 a. m.; rain fell at intervals during the day, and from 1.40 to 6 p. m. snow fell with the rain; the wind averaged about 50 miles per hour during the day; higher wind velocities have occurred several times, but the damage was not so great, the winds being of a steady character; the wind of this date was extremely gusty, blowing at the rate of 30 miles per hour one minute and 65 the next. Many vessels were caught on the lake and prevented from entering the harbor by the heavy seas; disasters were numerous and 10 lives were lost; the schooners *Evening Star*, *S. G. Mixer*, *Myrtle*, *Lincoln Dall*, *Jack Thompson*, *J. Loomis*, *McLaren*, *Mercury*, and *Rainbow* were total wrecks. The damage caused by this storm exceeded $100,000, without counting the damage to the right of way of the Illinois Central Railway, which amounted to many thousands more. A report from Alpena, Mich., states that a heavy north gale and snowstorm prevailed over Middle Island; a raft in tow of the tug *John Owens* went ashore north of Middle Island. The schooner *American Union* that was reported ashore on the 7th at Thompsons Harbor, 25 miles north of Alpena, went to pieces; loss, $10,000.

A severe northeast snowstorm swept over Boon, Mich., continuing throughout the day; snow fell to a depth of 4.0 inches; much timber was broken from the weight of snow. At Port Huron, Mich., a gale began in the afternoon and continued throughout the 19th. A schooner became water-logged a few miles north and went ashore; in the attempts to reach the vessel 4 persons were drowned; the crew were finally saved by the Life-Saving Service, but the vessel and cargo were a total loss. The storm was exceptionally heavy at Green Bay, Wis.; the water in the river, blown by the high wind, attained the highest point on record.

19th.—A heavy thunderstorm passed over the vicinity of Taunton, Mass.; a few miles south a house was struck by lightning and badly damaged. Damage was done by lightning at New London, Conn. A man was killed by lightning at Cape May, N. J. At Allendale, S. C., a severe windstorm damaged crops.

20th.—A heavy thunder and rain storm damaged wheat at Taneytown, Md. An unusually heavy snowstorm prevailed throughout the eastern and southern portions of Kentucky; great destruction was done to crops.

In connection with the snowfall in Kentucky on the 19th and 20th, it is noted that in all cases (viz, at Carlisle, Somerset, Lexington, Mount Sterling, and Corbin, where the snow was from 3 to 8 inches deep) the snow fell while the temperature of the air was between 35 and 40, which is unusually high. No snow had fallen in these regions in the month of May since 1854.

20th–21st.—Severe rainstorms and hard gales prevailed along the Atlantic coast from New Jersey northward. At Norwalk, Conn., a windstorm damaged fruit. At Atlantic City, N. J., a rain and wind storm began the early morning of the 20th and continued until the morning of the 21st; some delay was caused to railroad traffic; no wrecks were reported and only slight damage occurred along the sea front. At New Brunswick, N. J., rain began the morning of the 20th and continued during the 21st; damage was done to electric wires and trees. At Bayonne, N. J., a windstorm damaged fruit.

22d.—At Toledo, Ohio, heavy rain fell at intervals during the day, causing damage by flood to the amount of $1,500.

23d.—About 4 a. m. a violent storm moved southeast over McKinney, Tex., killing one person and damaging property.

24th.—In the vicinity of Seaford, Del., damage was done to crops by hail. A hail and thunder storm passed over Stanardsville, Va.; hail damaged gardens and wheat; a house was struck by lightning. Hail damaged crops in Vermilion and Avoyelles Parishes, La.

25th.—A very severe sandstorm at Fresno, Cal., broke limbs from fruit trees.

26th.—During a heavy hailstorm, about 5 miles west of Ocean City, N. J., considerable damage was caused to garden truck. One person was stunned by lightning at Glenville, W. Va. A house was struck by lightning at Plant City, Fla.

27th.—About 4 p. m. a severe thunderstorm occurred at Detroit, Mich.; 3 persons were stunned and a number of buildings struck by lightning.

28th.—At Williamstown, N. J., a horse was killed by lightning. Heavy thunder and rain storm caused damage in eastern Pennsylvania. At Philadelphia, Pa., the storm began at 12.20 p. m. and ended at 6.04 p. m.; at 4.05 p. m. the rain became very heavy, 0.30 inch falling in five minutes, causing considerable damage by flood. At Port Richmond, a suburb of Philadelphia, two men were killed by lightning. Two barns were struck by lightning and burned at Benedict, Md. A hailstorm in the southern portion of Chautauqua County, Kans., damaged crops.

29th.—A hailstorm about 6 miles west of Ravenna, Nebr., destroyed corn. Eight miles south of Spearfish, S. Dak., two horses were killed by lightning.

30th.—A man was stunned by lightning at Port Royal, S. C. A severe local storm passed over the vicinity of Tatum Station, S. C., killing 4 persons and demolishing buildings. Concordia, Kans., was visited by a heavy thunderstorm at 1.30 p. m.; hail fell, damaging garden vegetation and fruit. In the vicinity of Los Lunas, N. Mex., heavy hail damaged crops.

31st.—A house was struck by lightning at Pensacola, Fla. At Abilene, Tex., a thunderstorm, with high wind and heavy rain, began at 12.10 and ended at 4.10 p. m.; damage was done by flood, and railroad traffic was delayed for several hours. A wind and rain storm moved over Hillsboro, Tex., about 2 a. m.; a church was demolished and several buildings were moved from their foundations.

Thunderstorms and auroras, May, 1894.

States.	No. of stations.		1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.	18.	19.	20.	21.	22.	23.	24.	25.	26.	27.	28.	29.	30.	31.	Total.
Alabama	55	T.	....	....	1	....	....	....	2	1	1	3	3	1	3	5	1	1	....	3	....	....	....	....	1	1	....	....	....	....	4	2	33	T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	A.
Arizona	50	T.	....	....	....	....	....	....	....	....	....	....	4	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	7	T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	2	....	....	....	0	A.
Arkansas	49	T.	4	....	2	3	3	2	5	3	5	5	....	....	2	2	1	....	4	....	1	....	....	1	1	1	5	2	7	2	2	4	....	67	T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	A.
Colorado	81	T.	....	1	3	....	....	2	2	4	11	....	....	3	2	1	....	....	....	1	1	4	4	4	4	....	3	4	1	7	7	6	2	77	T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	A.
California	322	T.	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	3	....	....	....	....	....	2	9	2	1	1	....	2	2	23	T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	A.
Connecticut	23	T.	....	3	1	8	....	3	....	....	....	1	....	....	....	....	....	....	....	11	9	....	1	....	....	....	....	....	8	....	....	....	....	45	T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	1	A.
Delaware	6	T.	....	....	....	1	3	2	....	....	....	....	....	....	....	....	....	....	....	2	1	1	1	....	....	....	....	2	1	3	....	1	....	....	18	T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	A.
District of Columbia	4	T.	....	....	....	....	1	1	....	....	....	....	....	....	....	....	....	....	1	1	1	....	....	....	....	1	1	....	1	....	1	....	....	....	9	T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	A.
Florida	34	T.	3	....	....	....	....	....	2	5	3	2	1	3	4	13	6	7	6	4	....	....	....	....	3	4	5	11	5	2	....	4	5	98	T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	1	A.
Georgia	65	T.	....	2	1	2	....	1	3	5	5	2	1	4	6	7	1	2	2	8	2	....	....	....	2	1	....	6	2	1	1	1	1	69	T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	A.
Idaho	24	T.	1	....	1	....	....	....	....	....	....	....	....	2	1	3	3	....	....	....	1	....	3	....	....	2	1	1	2	....	....	1	2	24	T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	1	A.
Illinois	60	T.	11	....	16	3	17	15	5	....	5	12	....	....	4	5	3	1	15	2	1	....	....	....	1	4	1	5	....	....	....	....	....	126	T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	1	....	2	A.
Indiana	44	T.	5	1	6	2	2	7	....	....	....	4	....	1	....	5	7	4	5	2	....	....	....	....	1	....	....	4	5	....	....	....	....	61	T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	A.
Indian Territory	7	T.	....	....	....	....	....	....	1	2	....	....	....	....	....	....	....	....	....	....	....	....	....	....	2	....	....	....	....	....	1	....	....	6	T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	A.
Iowa	77	T.	9	3	5	5	13	2	....	1	8	2	....	....	....	....	4	7	....	....	....	....	....	....	....	1	2	3	....	....	....	....	....	65	T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	1	1	2	....	3	....	8	A.
Kansas	81	T.	1	4	6	12	4	....	....	3	12	9	....	....	1	....	....	2	....	....	....	....	....	....	....	1	2	1	2	10	9	8	1	88	T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	A.
Kentucky	43	T.	....	2	3	1	1	9	4	1	....	4	....	2	....	....	4	....	3	....	....	....	....	....	2	....	1	2	2	1	....	....	....	43	T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	1	A.
Louisiana	56	T.	5	2	....	....	....	....	....	3	1	5	11	13	9	20	11	2	2	9	2	....	....	2	6	15	3	1	....	5	7	7	8	149	T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	A.
Maine	18	T.	....	5	1	....	....	....	1	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	8	T.
		A.	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	5	A.
Maryland	26	T.	....	1	....	2	7	11	2	2	....	....	....	....	....	....	....	1	5	8	3	3	....	1	4	5	1	7	3	7	....	....	1	74	T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	1	....	....	....	....	....	....	3	A.
Massachusetts	83	T.	....	23	....	4	....	2	2	....	....	....	....	....	....	....	1	....	....	14	29	....	....	....	....	....	....	....	....	2	1	....	....	78	T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	1	1	....	4	A.
Michigan	92	T.	11	4	15	3	9	14	1	....	....	12	1	....	....	16	11	14	23	5	1	1	....	1	....	....	1	1	7	....	....	....	....	151	T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	10	A.
Minnesota	75	T.	8	15	3	12	15	....	....	....	17	....	1	3	8	18	24	11	5	3	....	....	....	....	....	....	....	....	9	1	....	....	....	152	T.
		A.	....	....	....	1	....	1	1	1	....	....	....	1	3	....	....	....	....	....	....	....	....	....	....	....	1	7	1	....	....	....	....	....	34	A.
Mississippi	52	T.	1	1	....	....	1	1	4	1	4	1	8	5	5	4	1	....	....	8	1	....	4	1	....	....	....	....	6	8	4	3	....	64	T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	2	1	....	....	3	2	5	1	4	0	A.
Missouri	96	T.	7	2	22	26	18	13	7	6	26	23	....	....	3	6	1	5	18	4	....	....	....	1	1	11	10	1	8	3	9	3	....	234	T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	A.
Montana	30	T.	....	....	....	....	....	....	....	....	....	....	....	2	7	1	2	....	....	4	4	5	....	....	....	2	....	3	2	2	1	....	3	38	T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	1	....	....	....	....	....	1	1	....	2	6	A.
Nebraska	72	T.	....	2	....	1	2	1	1	3	9	....	....	....	....	2	....	....	....	....	....	....	....	1	5	....	4	....	3	8	1	....	....	43	T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	A.
Nevada	44	T.	....	....	....	....	....	....	2	2	....	....	....	....	....	1	....	....	....	2	....	....	1	....	....	2	1	....	....	....	....	5	7	23	T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	A.
New Hampshire	28	T.	....	3	....	....	....	1	1	....	....	....	....	....	....	....	....	....	9	3	....	....	....	....	3	....	....	....	....	4	....	....	....	24	T.
		A.	....	....	....	....	....	....	....	....	1	2	1	....	1	1	1	1	....	....	....	1	....	2	1	....	....	....	....	1	1	3	....	17	A.
New Jersey	59	T.	....	....	....	....	9	18	4	3	....	....	1	....	....	....	....	....	4	29	4	....	1	....	4	4	2	2	1	30	....	....	1	116	T.
		A.	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	3	A.
New Mexico	29	T.	....	....	....	....	....	....	2	....	....	1	2	1	....	....	....	....	1	....	....	....	....	....	....	....	1	....	....	1	4	1	2	16	T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	A.
New York	95	T.	1	1	....	2	10	16	2	1	....	....	....	....	1	1	....	....	11	20	3	....	....	....	4	2	1	1	8	11	....	....	....	94	T.
		A.	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	2	....	2	1	1	....	10	A.
North Carolina	59	T.	....	16	2	8	15	3	7	5	....	1	7	1	14	8	9	3	9	26	13	1	1	5	17	2	....	4	9	15	4	14	6	219	T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	A.
North Dakota	38	T.	....	....	1	....	1	....	1	....	1	....	....	1	3	7	4	7	....	....	....	1	....	....	....	....	2	....	1	1	1	1	....	33	T.
		A.	....	....	....	....	....	....	....	1	....	....	....	....	5	....	....	....	....	....	....	2	....	....	....	....	....	2	....	5	5	2	2	1	23	A.
Ohio	145	T.	2	4	6	5	11	38	4	1	....	20	....	....	1	19	17	24	38	24	3	2	2	12	3	1	7	34	24	5	6	4	12	329	T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	3	A.
Oklahoma	18	T.	....	....	3	1	....	....	1	2	....	1	....	....	....	....	....	....	....	....	....	....	1	....	1	....	1	....	....	....	....	....	....	....	3	T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	1	....	....	....	....	10	A.
Oregon	75	T.	....	....	....	....	....	....	....	....	....	....	....	1	1	....	....	1	4	....	....	....	1	....	1	4	13	7	6	....	2	6	5	52	T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	A.
Pennsylvania	86	T.	....	....	1	5	9	30	6	....	....	1	2	....	....	....	7	16	27	11	3	1	....	3	1	1	16	7	15	....	1	....	....	163	T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	A.
Rhode Island	9	T.	....	1	....	....	....	....	2	....	....	....	....	....	....	....	....	....	2	5	....	....	1	....	....	....	....	....	....	....	....	....	....	....	1	T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	11	T.
South Carolina	44	T.	1	4	5	2	6	3	9	7	4	3	6	2	5	4	2	4	6	12	3	....	1	....	8	....	....	2	3	5	1	4	1	113	T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	A.
South Dakota	46	T.	1	2	1	....	....	....	....	2	1	1	....	....	2	2	1	2	1	....	....	....	....	....	....	1	1	....	1	1	3	....	....	23	T.
		A.	1	....	....	....	....	....	....	....	....	....	....	....	2	....	....	....	....	1	....	1	....	....	....	1	....	1	....	....	....	3	....	....	10	A.
Tennessee	43	T.	2	3	5	7	4	6	13	5	3	7	3	2	6	6	4	2	1	6	1	....	....	....	1	4	5	2	....	....	3	....	....	99	T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	A.
Texas	81	T.	1	2	....	....	4	1	1	4	4	4	4	5	3	1	....	....	....	1	2	....	....	1	1	1	4	2	4	2	....	5	7	64	T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	A.
Utah	36	T.	....	....	....	....	....	....	2	2	....	....	....	....	....	....	1	....	....	....	....	....	1	....	....	1	3	1	1	1	2	6	3	24	T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	1	A.
Vermont	15	T.	....	....	....	....	....	4	1	....	....	....	....	....	....	....	....	....	4	2	....	....	....	....	1	....	....	....	....	3	....	....	....	....	15	T.
		A.	....	....	....	....	....	....	....	1	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	8	2	10	....	2	1	119	A.
Virginia	44	T.	....	7	1	9	8	10	1	3	....	1	3	1	6	2	1	5	1	13	8	....	....	4	7	6	....	8	2	10	....	2	1	119	T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	A.
Washington	45	T.	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	1	....	....	....	....	1	....	3	7	3	....	....	1	2	19	T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	2	1	1	1	....	....	....	....	11	A.
West Virginia	36	T.	....	2	....	....	5	14	....	3	....	1	....	1	2	1	1	7	1	10	1	....	....	....	1	....	2	6	....	4	....	....	1	63	T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	A.
Wisconsin	67	T.	20	2	6	3	24	4	....	....	4	2	....	1	10	9	25	17	19	1	....	....	....	....	1	....	....	7	4	....	1	....	....	160	T.
		A.	....	....	....	....	....	2	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	1	5	6	....	7	1	23	A.
Wyoming	14	T.	....	....	....	....	....	....	....	....	....	....	....	....	1	....	2	....	....	....	....	....	1	....	....	....	....	....	....	....	2	....	....	....	6	T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	A.
Sums	2,779	T.	94	118	117	127	202	234	96	77	130	129	58	50	103	169	148	133	208	274	121	20	23	34	85	81	93	164	133	169	79	97	79	3657	T.
		A.	1	1	0	2	0	3	1	3	4	2	2	1	12	2	1	2	1	1	1	11	2	11	4	4	2	4	18	30	24	27	4	179	A.

ATMOSPHERIC ELECTRICITY.

GENERAL STATISTICS.

The table on page 213 shows in detail for May, 1894, the number of stations from which meteorological reports were received, and the number of such stations reporting thunderstorms (T) and auroras(A) in each State and on each day of the month.

THUNDERSTORMS.

A mention of the more severe thunderstorms reported during the month is given under "Local storms." The dates on which reports of thunderstorms were most numerous were the 5th, 202; 6th, 234; 14th, 169; 17th, 208; 18th, 274; 28th, 169.

The States from which the reports of thunderstorms were most numerous were: Ohio, 329; Missouri, 234; North Carolina, 219; Pennsylvania, 163; Wisconsin, 160; Minnesota, 152; Michigan, 151.

AURORAS.

The evenings on which bright moonlight must have interfered with observations of faint auroras are assumed to be the four days preceding and following the date of full moon, viz, from the 15th to the 23d, inclusive. On the remaining twenty-two days of the month 145 reports were received, or an average of 6 per day. The dates on which the reported number especially exceeded this average were the 27th (18), 28th (30), 29th (24), 30th (27). The States from which auroras were reported by a large percentage of observers were: Iowa, 8; Maine, 5; Michigan, 10; Minnesota, 34; Montana, 6; New Hampshire, 17; New York, 10; North Dakota, 23; South Dakota, 10; Wisconsin, 23.

INLAND NAVIGATION.

STAGE OF WATER IN RIVERS.

The following table shows the danger point and the highest and lowest stages for the month of May, 1894:

Heights of rivers above low-water mark, May, 1894.

Stations.	Danger-point on gauge.	Highest water.		Lowest water.		Monthly range.
		Height.	Date.	Height.	Date.	
Red River.	*Feet.*	*Feet.*		*Feet.*		*Feet.*
Shreveport, La	29.2	29.8	15	18.2	1	11.6
Arkansas River.						
Fort Smith, Ark	22.0	15.3	13	2.7	31	12.6
Little Rock, Ark	23.0	17.6	3	5.6	31	12.0
Missouri River.						
Fort Buford, N. Dak	25.0	.....	.....	.....	.....	.....
Bismarck, N. Dak	75.0	.....	.....	.....	.....	.....
Pierre, S. Dak	14.0	.....	.....	.....	.....	.....
Sioux City, Iowa	18.7	14.2	25	8.9	22	5.3
Omaha, Nebr	18.0	13.4	26	8.4	22, 23	5.0
Kansas City, Mo	21.0	16.7	28	10.0	23	6.7
Mississippi River.						
St. Paul, Minn	14.0	11.8	21	7.4	31	4.4
La Crosse, Wis	10.8	12.8	22	9.7	5-8	3.1
Dubuque, Iowa	16.0	15.5	27, 28	11.3	12	4.2
Davenport, Iowa	15.0	12.3	31	7.6	1	4.7
Keokuk, Iowa	14.0	10.9	11	6.9	1	4.0
Hannibal, Mo	17.0	11.8	12, 13	7.3	1	4.5
St. Louis, Mo	30.0	23.3	12	12.4	1	10.9
Cairo, Ill	40.0	28.1	13	18.6	26	9.5
Memphis, Tenn	33.0	20.9	16	12.5	29	8.4
Vicksburg, Miss	41.0	35.8	1	24.4	31	11.4
New Orleans, La	13.0	13.7	1-3	11.2	31	2.5
Ohio River.						
Parkersburg, W. Va	38.0	25.9	24	5.5	18	20.4
Cincinnati, Ohio	45.0	32.0	27	9.4	22	22.6
Louisville, Ky	24.0	11.4	28	5.7	20, 21	5.7
Cumberland River.						
Nashville, Tenn	40.0	15.6	26	4.5	8	11.1
Tennessee River.						
Chattanooga, Tenn	33.0	7.1	25	3.2	11	3.9
Knoxville, Tenn	29.0	.....	.....	.....	.....	.....
Monongahela River.						
Pittsburg, Pa	22.0	22.5	22	2.6	14	19.9
Savannah River.						
Augusta, Ga	32.6	11.7	9	6.2	31	5.5
Willamette River.						
Portland, Oregon	15.0	29.9	31	15.2	6,7	13.8
Susquehanna River.						
Harrisburg, Pa	17.0	.....	.....	.....	.....	.....
Alabama River.						
Montgomery, Ala	48.0	5.8	17	1.4	30, 31	4.4
James River.						
Lynchburg, Va	18.0	2.5	21, 22	0.5	16, 17	2.0
Sacramento River.						
Red Bluff, Cal	22.0	5.3	15	3.6	25, 30, 31	1.7
Sacramento, Cal	25.0	22.0	17	21.3	31	0.7
Des Moines River.						
Des Moines, Iowa	19.0	4.0	12-16	3.0	30, 31	1.0

FLOODS.

The above table shows that in the rivers here recorded the waters during May rose above the danger line at Shreveport, where the Red River was highest on the 15th; La Crosse, where the Mississippi was highest on the 22d; New Orleans, where the Mississippi was highest on the 1st, 2d, and 3d; Pittsburg, where the Monongahela was slightly above the danger line on the 22d; Portland, Oreg., where the Willamette was above the danger line throughout the month, and 14 feet above on the 31st, constituting the most destructive flood on record.

The following additional dates of floods in rivers are summarized from special reports and newspapers:

Arkansas River.—Pueblo, Colo., 31st.

Snake River.—Idaho Falls, Idaho, 29th.

Patapsco River.—Baltimore, Hagerstown, and Williamsport, Md., 20th.

Mississippi River.—Minneapolis, Minn., 20th.

Allegheny River.—Olean, N. Y., 20th, higher than in 1889. Salamanca and Carrollton, N. Y., 21st.

Buffalo River.—Buffalo, N. Y., 20th, highest flood since 1890.

Canadaway Creek.—Dunkirk, N. Y., 20th, a cloud-burst at noon.

Chemung River.—Elmira, N. Y., 20th, rising rapidly; 21st, overflow.

Genesee River.—Danville, N. Y., 20th, rain for forty-eight hours; destruction to crops, $500,000. Geneseo, N. Y., damage, $50,000; Avon, N. Y., $10,000; Cuylersville, N. Y., $15,000; Cuba, N. Y., $5,000; Caneadea, N. Y., $5,000; Wellsville, N. Y., $3,500. 21st, Rushford, Allegany Co., N. Y., flood equal to that of June, 1889; has rained incessantly since Thursday, 17th. Rochester, N. Y., 21st.

Oak Orchard Creek.—Medina, N. Y., 21st.

Lake Keuka.—Hammondsport, N. Y., 21st, wind, rain, lightning, and generally heavy rain for two days.

Lake Erie.—South Buffalo, N. Y., 20th.

Connemaugh River.—Johnstown, Pa., 21st, damage, $125,000; highest at 3 a. m.

Juniata River.—Hollidaysburg, Pa., 20th; Newport, Pa., 21st. Cloud-burst at Kittanning Point Reservoir washed away part of the dam, adding to the flood in the upper Juniata. This flood has been exceeded only once in the history of the Juniata Valley.

Lehigh River.—Bethlehem, Pa., 20th.

Nicopeck Creek.—Hazelton, Pa., 20th, much farm land inundated.

Schuylkill River.—Pottstown, Reading, and Norristown, 20th.

Little Schuylkill River.—Tamaqua, Pa., 20th.

Swatara River.—Pine Grove, Pa., 20th.

Susquehanna, Schuylkill, Juniata, and Lehigh Rivers.—Flood of the 21st equals or exceeds that of 1889, and nearly equals that of the spring freshet of 1865.

Susquehanna River.—Harrisburg, Pa., 20th, river 10 feet 6 inches and rising 10 inches per hour; 21st, 8 p. m., 24 feet; 22d, reached highest point, 25 feet 5 inches, only 14 inches below the great flood of June 11, 1889. Williamsport, Pa., 20th, great lumber boom broke and 150,000,000 feet of logs swept away; damage, $7,000,000. Havre de Grace, Md., 20th.

Tuna River.—Bradford, Pa., 20th, steady rain for four days; estimated loss, $150,000.

Black River.—Black River Falls, Wis., 16th.

Chippewa River.—Chippewa Falls, Wis., 15th, loss, $200,000. Chippewa City, Wis., almost entirely washed out, with 6,000,000 feet of logs; river 10 feet above low water mark. Eau Claire, Wis., 16th, heavy rain; in the Chippewa Valley alone estimated damage, $2,000,000.

Willow River.—Hudson, Wis., 17th, river to-day highest ever known; damage, about $150,000.

Fraser River.—Vancouver, B. C., 30th, rose 10 inches to-night; 3 inches above the highest historical mark; valley inundated for 100 miles; loss, fully $3,000,000.

OBSERVATIONS ON THE GREAT LAKES.

REPORTS FROM VESSELS.

The Lake Marine Section of the Forecast Division has received reports from the captains of 40 vessels navigating the Great Lakes. The following miscellaneous items are extracted from their reports:

Capt. W. S. Shay, steamship *Governor Smith*, 20th, 1 a. m., Lake Michigan, a violent north-northeast gale and very heavy sea.

Capt. J. W. Morgan, steamship *Australia*, on St. Marys River, Mich., 27th, reports snow squalls from 3 a. m. to noon.

Capt. S. Langell, steamship *Zealand*, 27th, Lake Superior, reports heavy snowstorm from 4.30 to 6.15 a. m., the snow falling so heavily unable to see consort at a distance of 600 feet; the wind was blowing very hard at the time with very heavy sea.

Capt. E. T. Rattray, steamship *Specular*, 16th, on St. Marys River, Mich., and 16th on Lake Michigan, heavy squalls with thunder, rain, and hail; the storm seemed to come from all points of the compass.

Capt. Edward Mooney, steamship *Wa-Wa-Tam*, 3d, Lake Erie, northern lights from 9.50 p. m. until midnight. 30th, Lake Michigan, northern lights from 9 to 9.20 p. m.

REPORTS FROM U. S. LIFE-SAVING STATIONS.

Through the co-operation of the General Superintendent of the Life-Saving Service and the Secretary of the Treasury, the Weather Bureau has received monthly reports for the month of May from the keepers of 35 U. S. Life-Saving Stations on the Great Lakes.

SUNSHINE AND CLOUDINESS.

GENERAL REMARKS.

The quantity of sunshine, and therefore of heat, received by the atmosphere is a fundamental factor in the most important meteorological phenomena; the quantity received by the atmosphere as a whole is very nearly constant from year to year, but the proportion received by the surface of the earth depends largely upon the distribution of cloudiness. The sunshine is now recorded automatically at about 38 regular stations of the Weather Bureau, either by its photographic or its thermal effects. The cloudiness is recorded by personal observations at all stations, and is given in the column of "average cloudiness" in Table I.

SUNSHINE.

During the month an instrumental record of sunshine has been kept at 17 stations by means of the photographic sunshine recorder and at 21 stations by means of the thermometric sunshine recorder; the results of these observations are given in Table IV, for each hour of local mean time (not seventy-fifth meridian time). The stations recording the largest percentage of sunshine between the hours of 11 a. m. and 1 p. m., were: Des Moines and Galveston, 95; Salt Lake City, 93.5; Tucson, 91. The stations having the least percentage between these hours were Eastport, 47.5; Portland, Oreg., 50; Cleveland, 54.5. The general average percentage for the whole month is given in the next to the last column of Table IV. The highest percentages were: Tucson, 89; and Galveston, 88. The lowest percentages were: Eastport, 40; Rochester, 44; Portland, Oreg., 45.

CLOUDINESS.

The average cloudiness between sunrise and sunset, as based on numerous personal observations, is given for each Weather Bureau station in Table I; the complement of this average cloudiness gives the observer's estimated percentage of clear sky, and these latter numbers are given in the last column of Table IV.

COMPARISON OF SUNSHINE AND CLEAR SKY.

The sunshine registers give the duration of direct sunshine whence the percentage of possible sunshine is derived; the observer's personal estimates give the percentage of area of clear sky. It must not be assumed that these numbers should agree, and for comparative purposes they have been brought together, side by side, in the following table, from which it appears that, in general, the instrumental record of duration of sunshine is almost always larger than the observer's personal estimate of percentages of area of clear sky; the average excess is 8 per cent for photographic records and 12 per cent for thermometric records:

Difference between instrumental and personal observations of sunshine.

Photographic stations.	Instrumental.	Personal.	Difference.	Thermometric stations.	Instrumental.	Personal.	Difference.
Tucson, Ariz	89	78	11	Des Moines, Iowa	78	69	9
Galveston, Tex	88	88	0	Key West, Fla	75	52	23
Santa Fe, N. Mex	77	63	14	New Orleans, La	72	72	0
Bismarck, N. Dak	72	68	4	Little Rock, Ark	69	41	28
Dodge City, Kans	71	63	8	Salt Lake City, Utah	69	57	12
Kansas City, Mo	71	56	15	St. Louis, Mo	66	56	10
Savannah, Ga	71	60	11	Baltimore, Md	65	52	13
Denver, Colo	63	46	17	Chicago, Ill	62	50	12
San Francisco, Cal	59	49	10	Colorado Springs, Colo.	62	41	11
Washington, D. C	59	51	8	Columbus, Ohio	61	40	21
Cincinnati, Ohio	56	47	9	New Haven, Conn	58	45	13
Cleveland, Ohio	54	40	14	Boston, Mass	57	46	11
San Diego, Cal	53	56	− 3	Louisville, Ky	57	39	18
Portland, Oreg	45	45	0	Philadelphia, Pa	57	38	19
Eastport, Me	40	31	9	Wilmington, N.C.	57	60	− 3
Helena, Mont	.....	.....	.....	Portland, Me	55	35	20
Memphis, Tenn	.....	61	.....	Detroit, Mich	53	42	11
				Buffalo, N. Y	52	46	12
				New York, N. Y	49	41	8
				Rochester, N. Y	43	35	9
				Vicksburg, Miss	.....	70	.....

NOTES BY THE EDITOR.

REMARKABLE HAIL.

During a severe hailstorm at Vicksburg on the afternoon of Friday, May 11, a remarkably large hailstone was found to have a solid nucleus, consisting of a piece of alabaster from one-half to three-quarters of an inch. During the same storm at Bovina, 8 miles east of Vicksburg, a gopher turtle, 6 by 8 inches, and entirely encased in ice, fell with the hail.

An examination of the weather map shows that these hail storms occurred on the south side of a region of cold northerly winds, and were but a small portion of a series of similar storms; apparently some special local whirls or gusts carried heavy objects from the earth's surface up to the cloud region, where they were encased by successive layers of snow and ice, until they fell as hailstones. The fact that hailstones, as well as drops of water and flakes of snow, often contain nuclei that must have been carried up from the earth's surface, is entirely in accord with the general principle that ascending currents precede the formation of cloud and rain, and that solid nuclei are needed to initiate the ordinary precipitation of moisture.

THE TEMPERATURE OF MAY AND OF THE YEAR.

In connection with an article published by a correspondent at Smiths Grove, Ky., giving an account of the remarkable weather of the year 1816, it has been suggested that there may be some connection between the temperature of any given month and the general temperature of the year, and that 1894 may be as cold a year as 1816, and that if this be the case, then a study of the temperatures of the month and the year during the past century may enable us to predict the annual mean when any monthly mean is known.

Following up this suggestion, which is not new to the European students of meteorology, the present editor desires to elucidate the subject by a study of the data at hand for some station in America; he, therefore, submits the following tables relative to Philadelphia and eastern Pennsylvania. Philadelphia is chosen partly because of its long record and partly on account of its position midway along the Atlantic coast. It is not likely that any specific rules deduced from Philadelphia would be rigorously applicable to stations far distant, north, south, or west, but in a general way it may be safely anticipated that the rules deduced for other stations will not be any more definite or more useful than those for this place.

The monthly and annual mean temperatures of any station show such a constancy, while the errors due to the thermometers, the hours of observations, the localities and methods of exposure are so large that it is always a matter of uncertainty whether in our study of the climate we are not being misled by the unknown errors of the instruments and methods.

In the accompanying Table 1 there are given the recorded mean temperatures of the month of May for each year, as also the annual temperatures and the departures of these temperatures from the respective normals for the years 1825 to 1888. All of these temperatures were observed at one place, namely, the Philadelphia Hospital, and are here quoted from p. 127 of the "Annual Report of the Secretary for Internal Affairs of the Commonwealth of Pennsylvania for 1888." No details are known as to the numerous changes of instruments, observers, and location during this long period.

TABLE 1.—*Philadelphia (Pa.) Hospital.*
Means: May, 63.6; annual, 53.7.

Year.	Recorded temperatures.		Departures.		Year.	Recorded temperatures.		Departures.	
	May.	Annual.	May.	Annual.		May.	Annual.	May.	Annual.
	°	°	°	°		°	°	°	°
1825 ..	62.0	53.5	−1.6	−0.2	1857 ..	60.9	52.8	−2.7	−0.9
1826 ..	72.0	53.9	+8.4	+0.2	1858 ..	59.1	54.3	−4.5	+0.6
1827 ..	62.0	52.1	−1.6	−1.6	1859 ..	63.9	54.2	+0.3	+0.5
1828 ..	66.0	55.7	+2.4	+2.0	1860 ..	64.3	54.1	+0.7	+0.4
1829 ..	64.0	52.6	+0.4	−1.1	1861 ..	59.5	54.7	−4.1	+1.0
1830 ..	64.0	54.9	+0.4	+1.2	1862 ..	63.7	54.2	+0.1	+0.5
1831 ..	66.0	53.7	+2.4	0.0	1863 ..	64.6	54.5	+1.0	+0.8
1832 ..	62.0	53.9	−1.6	+0.2	1864 ..	67.2	54.8	+3.6	+1.1
1833 ..	63.0	53.7	−0.6	0.0	1865 ..	63.4	55.5	−0.2	+1.8
1834 ..	64.5	54.6	+0.9	+0.9	1866 ..	61.4	54.7	−2.2	+1.0
1835 ..	64.5	53.6	+0.9	−0.1	1867 ..	59.4	53.9	−4.2	+0.2
1836 ..	64.0	49.6	+0.4	−4.1	1868 ..	59.7	53.2	−3.9	−0.5
1837 ..	60.0	50.7	−3.6	−3.0	1869 ..	63.5	54.7	−0.1	+1.0
1838 ..	58.2	51.3	−5.4	−2.4	1870 ..	65.5	56.8	+1.3	+3.1
1839 ..	62.0	52.4	−1.6	−1.2	1871 ..	66.3	53.6	+2.7	−0.1
1840 ..	62.1	52.8	−1.5	−0.9	1872 ..	68.6	54.7	+5.0	+1.0
1841 ..	58.7	52.1	−4.9	−1.6	1873 ..	63.1	53.9	−0.5	+0.2
1842 ..	59.0	53.1	−4.6	−0.6	1874 ..	62.1	54.8	−1.5	+1.1
1843 ..	60.0	51.9	−3.6	−1.8	1875 ..	63.2	51.7	−0.4	−2.0
1844 ..	65.5	53.3	+1.9	−0.4	1876 ..	62.7	53.4	−1.9	−0.3
1845 ..	59.8	53.8	−3.8	+0.1	1877 ..	62.8	55.7	−0.8	+2.0
1846 ..	64.0	54.4	+0.4	+0.7	1878 ..	62.9	56.1	−0.7	+2.4
1847 ..	61.8	53.8	−1.8	+0.1	1879 ..	64.6	53.9	+1.0	+0.2
1848 ..	65.8	54.8	+2.2	+1.1	1880 ..	70.6	55.0	+7.0	+1.3
1849 ..	58.4	53.1	−5.2	−0.6	1881 ..	65.5	55.0	+1.9	+1.3
1850 ..	57.7	54.0	−5.9	+0.4	1882 ..	56.8	53.6	−6.8	−0.1
1851 ..	62.6	54.7	−1.0	+1.0	1883 ..	62.2	52.5	−1.4	−1.2
1852 ..	63.3	53.6	−0.3	−0.1	1884 ..	60.3	53.4	−3.3	−0.3
1853 ..	63.5	54.9	−0.1	+1.2	1885 ..	60.4	52.6	−3.2	−1.1
1854 ..	64.7	54.7	+1.1	+1.0	1886 ..	61.3	52.6	−2.3	−1.1
1855 ..	61.5	53.6	−2.1	−0.1	1887 ..	67.2	53.2	+3.6	−1.5
1856 ..	60.0	52.0	−3.6	−1.7	1888 ..	60.9	52.0	−2.7	−1.7

Table 2 gives similar data for the years 1790 to 1886 for Morrisville and Fallsington. This record is quoted from the same volume, p. 34, and is made up of several parts, viz: Morrisville, by C. Pierce, 1790 to 1859; Fallsington, by E. Hance, 1860 to 1875, and M. Gillingham, 1879 to 1886. Morrisville and Fallsington are on the west side of the Delaware River, near Trenton, and about 25 miles northeast of the Philadelphia Hospital; therefore, their general climatic conditions differ but little from those of Philadelphia.

TABLE 2.—*Observations at Morrisville and Fallsington, Pa.*
Means: May, 62.0°; annual, 51.9.

Year.	Temperature observations.		Departures.		Year.	Temperature observations.		Departures.	
	May.	Annual.	May.	Annual.		May.	Annual.	May.	Annual.
	°	°	°	°		°	°	°	°
1790 ..	56.0	52.0	−6.0	+0.1	1840 ..	61.0	52.3	−1.0	+0.4
1791 ..	58.0	53.2	−4.0	+1.3	1841 ..	58.0	51.7	−4.0	−0.2
1792 ..	58.0	51.5	−4.0	−0.4	1842 ..	60.0	52.8	−2.0	+0.9
1793 ..	62.0	53.8	0.0	+1.9	1843 ..	58.0	51.6	−4.0	−0.3
1794 ..	66.0	50.1	+4.0	−1.8	1844 ..	65.0	53.1	+3.0	+1.2
1795 ..	68.0	51.4	+6.0	−0.5	1845 ..	54.0	53.9	−8.0	+2.0
1796 ..	64.0	51.7	+2.0	−0.2	1846 ..	62.0	53.5	0.0	+1.6
1797 ..	64.0	51.2	+2.0	−0.7	1847 ..	.....	.....	.....	.....
1798 ..	65.0	51.7	+3.0	−0.2	1848 ..	.....	.....	.....	.....
1799 ..	68.0	51.1	+6.0	−0.8	1849 ..	56.3	50.8	−5.7	−1.1
1800 ..	70.0	51.4	+8.0	−0.5	1850 ..	56.5	51.8	−5.5	−0.1
1801 ..	66.0	52.0	+4.0	+0.1	1851 ..	59.5	50.9	−2.5	−1.0
1802 ..	71.0	53.8	+9.0	+1.9	1852 ..	59.3	50.0	−2.7	−1.9
1803 ..	60.0	51.8	−2.0	−0.1	1853 ..	61.6	51.7	−0.4	−0.2
1804 ..	62.0	51.2	0.0	−0.7	1854 ..	62.2	51.4	+0.2	−0.5
1805 ..	63.0	51.6	+1.0	−0.3	1855 ..	59.7	50.5	−2.3	−1.4
1806 ..	67.0	51.5	+5.0	−0.4	1856 ..	57.4	49.3	−4.6	−2.6
1807 ..	65.0	52.0	+3.0	+0.1	1857 ..	57.7	49.6	−4.3	−2.3
1808 ..	62.0	52.8	0.0	+0.9	1858 ..	56.7	51.5	−5.3	−0.4
1809 ..	60.0	51.2	−2.0	−0.7	1859 ..	61.0	50.6	−1.0	−1.3
1810 ..	58.0	51.0	−4.0	−0.9					
1811 ..	62.0	52.1	0.0	+0.2	1860 ..	60.3	50.8	−1.7	−1.1
1812 ..	60.0	51.0	−2.0	−0.9	1861 ..	56.0	52.0	−6.0	+0.1
1813 ..	59.0	50.5	−3.0	−1.4	1862 ..	60.6	51.3	−1.4	−0.6
1814 ..	62.0	51.0	0.0	−0.9	1863 ..	61.4	51.0	−0.6	−0.3
1815 ..	64.0	51.3	+2.0	−0.6	1864 ..	65.7	52.4	+3.7	+0.5
1816 ..	57.0	48.8	−5.0	−3.1	1865 ..	62.0	53.0	0.0	+1.1
1817 ..	65.0	52.7	+3.0	+0.8	1866 ..	59.0	52.4	−3.0	+0.5
1818 ..	62.0	52.8	0.0	+0.9	1867 ..	56.7	51.6	−5.3	−0.3
1819 ..	60.0	51.2	−2.0	−0.7	1868 ..	57.3	50.4	−4.7	−1.5
1820 ..	62.0	51.7	0.0	−0.2	1869 ..	59.7	51.7	−2.3	−0.2
1821 ..	65.0	51.5	+3.0	−0.4	1870 ..	63.3	54.3	+1.3	+2.4
1822 ..	70.0	53.2	+8.0	+1.3	1871 ..	63.0	52.1	+1.0	+0.2
1823 ..	64.0	53.5	+2.0	+1.6	1872 ..	65.7	52.2	+3.7	+0.3
1824 ..	67.0	53.6	+5.0	+1.7	1873 ..	60.7	51.8	−1.3	−0.1
1825 ..	62.0	54.0	0.0	+2.1	1874 ..	61.7	53.2	−0.3	+1.3
1826 ..	71.0	53.0	+9.0	−0.9	1875 ..	64.3	51.8	+2.3	−0.1
1827 ..	62.0	50.3	0.0	−1.6					
1828 ..	65.0	56.3	+3.0	+4.4	1876 ..	.....	.....	.....	.....
1829 ..	64.0	53.0	+2.0	+1.1	1877 ..	.....	.....	.....	.....
1830 ..	64.0	52.5	+2.0	+0.6	1878 ..	.....	.....	.....	.....
1831 ..	66.0	53.0	+4.0	+1.1	1879 ..	63.2	52.1	+1.2	+0.2
1832 ..	62.0	50.2	0.0	−1.7	1880 ..	68.2	53.3	+6.2	+1.4
1833 ..	63.0	52.6	+1.0	+0.7	1881 ..	64.3	53.8	+2.3	+1.9
1834 ..	64.0	52.4	+2.0	+0.5	1882 ..	56.3	52.5	−5.7	+0.6
1835 ..	64.0	52.2	+2.0	+0.3	1883 ..	53.0	50.5	−9.0	−1.4
1836 ..	63.0	50.2	+1.0	−1.7	1884 ..	61.2	52.1	−0.8	+0.2
1837 ..	61.0	52.3	−1.0	+0.4	1885 ..	57.2	49.0	−4.8	−2.9
1838 ..	58.0	52.3	−4.0	+0.4	1886 ..	58.2	49.7	−3.8	−2.2
1839 ..	62.0	52.0	0.0	+0.1					

If we adopt 63.6° and 53.7° as the mean temperatures for May and for the year, respectively, in Table 1 for Philadelphia and take the departures of the individual monthly and annual figures from these normals, we obtain the positive and negative departures given in Table 1. Similarly, if we adopt 62.0° and 51.9° as the normal temperatures for May and for the year for the combined stations in Table 2, we obtain the departures given in that table.

If now we group these departures by limits of 1° each we obtain the number of times that each departure occurs, as shown in Table 3. The systematic arrangement of these departures (being most numerous in the neighborhood of 0 and least numerous at a greater distance therefrom) shows that on the average of the century there are about as many warm months and years as there are cold ones.

When a positive departure for May occurs simultaneously with a positive departure for the year we have to count that year as favoring the hypothesis that a warm May coincides with, and therefore, to a certain extent, presages a warm year. Similarly, when a negative departure for May coincides with a negative departure for that year it corroborates

the general rule that warm or cold Mays presage warm or cold years, respectively.

TABLE 3.

Departures.	Frequency at— Philadelphia. May.	Philadelphia. Year.	Morrisville and Fallsington. May.	Morrisville and Fallsington. Year.	Departures.	Frequency at— Philadelphia. May.	Philadelphia. Year.	Morrisville and Fallsington. May.	Morrisville and Fallsington. Year.
	°	°	°	°		°	°	°	°
+9.5 to +8.6	0	0	2	0	−1.5 to −2.4	11	8	7	8
+8.5 to +7.6	1	0	2	0	−2.5 to −3.4	4	1	5	3
+7.5 to +6.6	1	0	0	0	−3.5 to −4.4	7	1	8	1
+6.5 to +5.6	0	0	3	0	−4.5 to −5.4	5	0	6	0
+5.5 to +4.6	1	0	2	0	−5.5 to −6.4	1	0	5	0
+4.5 to +3.6	2	0	5	1	−6.5 to −7.4	1	0	0	0
+3.5 to +2.6	1	1	6	0	−7.5 to −8.4	0	0	1	0
+2.5 to +1.6	5	4	10	9	−8.5 to −9.4	0	0	1	0
+1.5 to +0.6	6	19	7	18	Total	64	64	92	92
+0.5 to −0.4	11	20	15	31					
−0.5 to −1.4	7	10	7	21					

TABLE 4.

Correlate departures. May.	Correlate departures. Year.	No. of cases. Phil. May.	No. of cases. Phil. Year.	No. of cases. M. & F. May.	No. of cases. M. & F. Year.	General result.
+	+	16	22	1	1	Favorable, 91.
−	−	23	30	1	1	
+	−	6	15	0	9	Unfavorable, 50.
−	+	17	12	0	3	
+	0	1	1	0	0	Neutral, 15.
−	0	1	1			
0	+	0	9			
0	−	0	3			
0	0	0	0			

Table No. 4 shows the number of cases that agree, or oppose, or are neutral, with respect to this rule, and the sum total shows that we have 91 favorable cases, 50 unfavorable, and 15 neutral. There is, therefore, only a very slight probability in favor of the general application of the rule.

OBSERVATIONS AT HONOLULU, HAWAIIAN ISLANDS.

As the weather on the Pacific coast depends so largely upon the conditions of the atmosphere to the westward, it is considered important to publish in full and as soon as practicable the data furnished by observers in Alaska, the Sandwich Islands, and adjacent regions.

Meteorological observations at Honolulu, Hawaiian Islands, for May, 1894, by Curtis J. Lyons, Meteorologist to the Government Survey.

Date.	Barometer at sea level, 9 a. m.	Barometer at sea level, 3 p. m.	Barometer at sea level, 9 p. m.	Temperature, 6 a. m.	Temperature, 2 p. m.	Temperature, 9 p. m.	Temperature, Minimum.	Temperature, Maximum.	Humidity, Relative, 9 a. m.	Humidity, Relative, 9 p. m.	Humidity, Absolute.	Wind, Direction.	Wind, Force.	Cirrus cloud moving from—	Rain to 6 a. m.
	Ins.	Ins.	Ins.	°	°	°	°	°	%	%					Ins.
1 ..	30.10	30.02	30.08	72	76	74	72	80	70	75	6.6	ne.,s., e.	3, 1	.....	0.00
2 ..	30.10	30.03	30.08	72	79	71	69	82	67	76	6.5	ne.	3	.....	0.00
3 ..	30.04	29.96	30.04	66	79	74	64	81	67	74	6.9	e., s.	2	.....	0.00
4 ..	30.06	30.00	30.12	67	77	72	66	80	73	85	7.3	s., n.	0	.....	0.00
5 ..	30.08	30.00	30.05	73	79	71	71	80	75	85	6.9	e., s., ne	2	.....	0.02
6 ..	30.03	29.98	30.04	69	76	73	65	80	66	67	6.3	ne.	3	.....	0.00
7 ..	30.04	30.01	30.10	70	77	73	66	80	67	70	6.2	ne.	3	.....	0.00
8 ..	30.13	30.08	30.16	71	79	73	70	79	67	74	6.6	ne.	3, 5	.....	0.01
9 ..	30.18	30.10	30.15	71	78	74	69	79	67	78	6.3	ne.	4	.....	0.06
10 ..	30.12	30.08	30.14	71	79	73	71	81	71	70	6.6	ne.	4	.....	0.03
11 ..	30.13	30.09	30.15	72	78	73	72	80	59	70	6.1	ene.	4	.....	0.01
12 ..	30.18	30.14	30.22	72	76	74	71	80	66	73	6.3	ne.	5	.....	0.01
13 ..	30.26	30.20	30.27	72	78	72	72	79	65	69	6.1	ne.	4	.....	0.00
14 ..	30.26	30.20	30.25	72	77	72	71	78	63	65	5.7	ne.	3	.....	0.00
15 ..	30.21	30.13	30.18	70	78	72	67	79	57	68	5.7	ne.	3	.....	0.00
16 ..	30.17	30.07	30.16	71	77	72	69	78	65	69	5.8	ne.	4	.....	0.01
17 ..	30.13	30.07	30.13	71	75	71	69	78	65	75	6.1	nne.	3, 5, 2	.....	0.01
18 ..	30.14	30.09	30.16	71	77	70	69	79	67	83	6.2	ne.	3	.....	0.03
19 ..	30.13	30.10	30.13	71	74	72	68	76	73	69	6.2	nne.	4	.....	0.13
20 ..	30.12	30.07	30.10	71	77	72	71	80	61	70	6.1	ne.	4, 2	8.40 W.	0.00
21 ..	30.12	30.05	30.14	72	78	68	67	81	68	70	6.1	ne.	3	.....	0.00
22 ..	30.13	30.07	30.12	65	79	73	64	82	71	73	6.3	nne.	2	8.10 W.	0.00
23 ..	30.00	30.02	30.07	70	78	69	69	80	74	87	7.3	w., n.	2	.....	0.00
24 ..	30.03	30.00	30.07	70	78	69	67	81	77	85	7.5	s., sw.	2	.....	0.04
25 ..	30.07	30.01	30.10	65	80	72	65	83	62	80	6.8	n., e., s.	2	8.30 W.	0.03
26 ..	30.11	30.08	30.16	67	79	74	66	81	74	70	6.3	ne.	3	.....	0.00
27 ..	30.17	30.14	30.22	72	80	75	70	82	60	70	6.4	ne.	3	8.40 W.	0.00
28 ..	30.21	30.15	30.23	74	80	75	73	82	60	67	6.2	ne.	3, 5	8.30 W.	0.00
29 ..	30.22	30.14	30.21	74	79	75	73	82	63	69	6.4	ene.	5	8.10 W.	0.01
30 ..	30.19	30.13	30.18	74	79	75	73	81	63	68	6.4	ne.	5	8.40 W.	0.00
31 ..	30.18	30.10	30.17	74	80	75	74	81	61	69	6.3	ne.	5	.....	0.00
Mean.	30.132	30.075	30.141	70.7	77.9	72.5	69.1	80.3	66.6	72.8	6.4		3.3		0.40
	30.103			73.7			74.7		69.7						

The barometer is corrected for temperature and reduced to sea level, but the gravity correction, −0.06, is still to be applied.
The absolute humidity is expressed in grains of water, per cubic foot, and is the average of four observations.
The rain is measured at 6 a. m., daily.
The extremes of the force of the wind are given when it has varied more than usual.

METEOROLOGICAL TABLES.

[*Prepared by the Division of Records and Meteorological Data.*]

The following pages present in tabular form the climatological data for the current month, on which the text of the preceding part of this REVIEW has, to a large extent, been based.

For a detailed description of the methods of observation, compilation, and computation relating to these tables, the reader is referred to page 129 of the MONTHLY WEATHER REVIEW for March, 1894. The general contents of the tables are as follows:

Table I gives for 140 Weather Bureau stations, making two observations daily, and for 10 others making only one observation, the ordinary climatological data.

Table II gives for about 2,200 stations, occupied by voluntary observers, the mean and extreme temperatures and the total precipitation.

Table III gives for about 30 Canadian stations the climatological data.

Table IV gives for 38 Weather Bureau stations the percentages of sunshine for each hour of local mean time.

Table V gives for 81 stations the mean temperatures for each hour of seventy-fifth meridian time.

Table VI gives for 66 stations the mean pressures for each hour of seventy-fifth meridian time.

Table VII gives for 138 stations the mean hourly movement of the wind.

Table VIII gives for 68 stations the resultant movements and directions of the wind from continuous registrations.

Table IX gives for 140 stations the component and resultant directions based on simultaneous observations at 8 a. m. and 8 p. m., seventy-fifth meridian time.

TABLE I.—*Climatological data for Weather Bureau Stations, May*, 1894.

Districts and stations.	Elevation above sea-level, feet.	Length of record, years.	Pressure, in inches.			Temperature of the air, in degrees Fahrenheit.								Humidity and precipitation.					Wind.				Clear days.	Partly cloudy days.	Cloudy days.	Average cloudiness, tenths.	Mean temperature data since opening of station.			
			Mean pressure, 8 a. m. and 8 p. m. + 2.	Mean reduced.	Departure from normal.	Mean max. and min. + 2.	Departure from normal.	Maximum.	Date.	Mean maximum.	Minimum.	Date.	Mean minimum.	Greatest daily range.	Mean temperature of the dew-point.	Mean relative humidity, per cent.	Precipitation, in inches.	Departure from normal.	Days with .01 or more.	Total movement, miles.	Prevailing direction.	Maximum velocity. Miles per hour.	Maximum velocity. Direction.	Maximum velocity. Date.				Highest for month.	Year.	Lowest for month.	Year.
New England.						54.5 + 0.6										3.79 + 0.4														
Eastport	76	22	29.91	30.00	+ .04	47.6 + 0.5	75	13	54	35	14	41	35	40	81	1.69 — 2.5	10	6,776	sw.	36	ne.	25	7	11	13	6.9	49.4 *	45.3 *	
Portland	103	23	29.86	29.96	— .01	52.1 — 1.4	84	2	60	38	15	45	36	43	76	7.33 + 4.0	16	6,209	s.	25	nw.	13	9	8	14	6.5	59.7 1880	48.8 1888	
Northfield	872	8	29.03	29.96	— .01	54.4 + 1.7	83	1	65	30	*	44	44	45	75	3.33 + 0.5	16	7,140	s.	51	sw.	7	10	11	10	5.7	58.9 1887	49.6 1892	
Boston	125	24	29.84	29.98	— .00	57.6 + 1.4	88	2	66	39	22	49	28	46	70	4.12 — 0.6	12	8,095	e.	45	w.	7	11	10	10	5.4	62.6 1880	49.8 1882	
Nantucket	14	8	29.98	29.99	— .03	52.6 + 0.6	73	2	59	38	11	46	25	47	83	1.88 — 1.4	11	8,284	sw.	38	se.	31	8	13	10	5.8	55.0 1887	50.5 1888	
Woods Holl	.....	17	.....	.....	.....	54.4 — 0.0	73	2	60	41	4	48	24	.....	.....	3.52 + 0.4	9	9,045	sw.	43	w.	2	8	12	11	5.7	57.3 1880	50.7 1888	
Vineyard Haven	.....	8	.....	.....	.....	57.2 + 0.7	81	2	66	41	24	49	28	.....	.....	4.78 + 1.7	9	.....	sw.	.....	.....	...	16	3	12	....	59.5 1889	54.5 1888	
Block Island	27	14	29.95	29.98	— .02	53.8 + 1.5	75	2	60	41	4	48	23	48	86	3.36 — 0.4	12	10,617	sw.	48	e.	31	10	11	10	5.5	55.8 1887	48.9 1882	
Narragansett Pier	.....	13	.....	.....	.....	55.4 + 0.8	83	2	64	36	15	47	29	.....	.....	3.09 0.0	10	.....	sw.	.....	.....	...	14	0	17	....	57.6 1887	50.7 1882	
New Haven	107	22	29.84	29.96	— .04	57.6 + 1.0	86	2	67	41	22	48	32	53	85	4.49 + 1.0	9	6,173	se.	32	e.	20	11	7	13	5.5	64.0 1880	51.3 1882	
New London	45	24	29.95	30.00	— .01	56.3 + 0.1	81	2	64	42	22	48	30	49	81	3.93 0.0	12	5,998	sw.	34	ne.	20	9	15	7	5.7	61.3 1880	51.5 1882	
Mid. Atlantic States.						64.4 + 1.0										5.13 + 1.7														
Albany	85	21	29.88	29.96	— .02	59.7 + 0.4	84	1	69	39	15	50	32	50	72	4.64 + 1.6	17	5,922	s.	30	se.	11	10	8	13	5.7	66.4 1880	55.9 1882	
New York, N. Y	185	24	29.77	29.97	— .03	60.8 + 1.3	83	2	69	44	29	52	28	50	74	3.90 + 0.8	13	7,409	se.	36	se.	20	11	8	12	5.9	64.8 1880	53.5 1882	
Harrisburg	377	6	29.55	29.96	.....	62.4	84	13	71	42	29	54	30	52	74	6.07	19	5,514	e.	39	sw.	6	11	7	13	5.7	62.6 1889	59.0 1893	
Philadelphia	117	24	29.84	29.96	— .06	63.7 + 1.4	87	2	73	43	29	54	31	52	74	9.40 + 6.5	15	7,859	sw.	42	ne.	21	9	6	16	6.2	68.3 1880	57.3 1882	
Atlantic City	53	21	29.91	29.96	— .05	59.5 + 2.5	83	2	66	46	29	53	30	53	84	5.03 + 2.3	18	8,717	e.	42	e.	21	9	7	15	6.3	63.2 1880	53.2 1882	
New Brunswick	.....	.....	.....	.....	.....	61.2	87	2	72	41	15	50	34	.....	.....	6.23	13	.....	e.	.....	.....	...	6	12	13	....	.....	.....	.....
Baltimore	179	24	29.75	29.94	— .08	65.3 + 1.4	87	2	74	43	29	57	30	52	68	7.26 + 3.7	18	5,880	se.	33	w.	7	12	8	11	4.8	70.6 1880	59.4 1882	
Washington, D. C	112	24	29.83	29.95	— .08	65.9 + 2.3	88	2	76	41	29	56	32	54	70	4.03 + 0.1	15	4,836	s.	47	nw.	18	14	4	13	4.9	70.5 1880	59.2 1882	
Cape Henry	.....	21	.....	.....	.....	67.8 + 3.0	95	18	77	50	1	59	33	.....	.....	3.75 — 0.2	10	.....	se.	.....	.....	...	17	5	9	....	70.2 1880	61.0 1877	
Lynchburg	685	23	29.24	29.97	— .04	67.2 + 1.5	93	17	78	44	21	56	35	54	65	4.63 + 0.9	15	3,033	sw.	25	nw.	31	8	19	4	4.9	71.7 1880	62.2 1891	
Norfolk	57	24	29.91	29.97	— .05	69.3 + 3.0	93	18	79	49	1	60	31	60	77	3.47 — 0.6	11	6,304	se.	48	nw.	4	12	13	6	4.6	73.3 1880	63.0 *	
S. Atlantic States.						71.1 + 0.7										3.75 — 0.3														
Charlotte	773	16	29.16	29.96	— .06	69.4 + 0.9	92	17	81	41	21	58	30	54	65	2.27 — 2.2	10	4,358	sw.	34	sw.	18	15	13	3	4.3	71.2 1881	65.3 1882	
Hatteras	11	14	29.99	30.00	— .03	70.3 + 3.8	88	18	75	59	1	66	16	63	80	4.52 + 0.2	8	9,225	sw.	43	n.	31	9	17	5	4.8	70.3 1894	64.3 1882	
Kittyhawk	9	20	29.95	29.96	— .07	68.5 + 2.7	89	18	75	51	1	62	24	60	79	4.15 + 0.4	8	9,753	sw.	43	s.	19	17	8	6	3.8	69.8 1890	60.3 1877	
Raleigh	388	8	29.57	29.98	— .04	69.6 + 2.1	92	17	80	45	21	59	31	58	73	7.51 + 1.9	15	3,922	s.	30	n.	2	7	16	8	5.5	70.1 1887	64.5 1891	
Southport	34	19	29.97	30.00	— .04	69.2 — 1.2	82	9	76	47	20	03	25	64	80	1.90 — 1.3	8	8,361	sw.	32	sw.	19	10	19	2	4.5	74.4 1888	66.1 1877	
Wilmington	78	24	29.92	30.00	— .02	70.5 + 0.5	90	17	79	49	20	62	24	64	82	4.86 + 0.5	12	6,436	sw.	34	w.	30	14	11	6	4.0	73.4 1872	64.3 1877	
Charleston	52	23	29.97	30.02	— .01	72.4 — 0.3	89	17	80	45	20	65	21	64	79	3.47 — 0.6	14	6,379	sw.	27	nw.	19	6	25	0	4.6	76.3 1879	68.8 1877	
Columbia	.....	7	.....	.....	.....	72.3 + 0.3	95	17	84	40	20	60	30	.....	.....	1.69 — 2.5	10	.....	w.	.....	.....	...	8	19	4	....	73.0 1889	70.2 1891	
Augusta	209	23	29.97	30.02	— .01	71.4 — 1.4	92	17	82	41	20	60	28	58	68	3.49 + 0.1	10	3,940	s.	43	sw.	18	10	16	5	4.8	75.7 1878	69.0 1891	
Savannah	98	24	29.91	30.02	— .02	73.2 — 0.3	93	17	83	44	20	64	27	63	78	5.93 + 3.0	11	5,922	s.	44	nw.	26	13	17	1	4.0	77.1 1878	70.2 1877	
Jacksonville	43	23	29.97	30.02	.00	75.3 + 0.2	95	31	85	46	20	65	28	62	70	1.49 — 2.9	9	5,840	s.	34	sw.	18	9	19	3	4.5	78.2 1878	72.8 1891	
Florida Peninsula.						75.6 — 1.2										3.83 — 0.5														
Jupiter	28	7	29.98	30.01	.....	75.2 — 0.9	90	19	82	55	21	69	23	68	81	2.95 — 2.8	11	7,147	e.	36	s.	27	15	10	6	4.8	76.4 1893	74.4 1891	
Key West	22	24	29.99	30.01	.00	78.0 — 1.8	86	25	82	66	2	73	15	68	73	4.53 + 1.0	11	6,300	e.	29	ne.	1	11	16	4	4.8	82.4 1873	77.0 1891	
Tampa	36	15	29.97	30.01	.....	75.4 + 0.1	93	30	86	53	20	65	28	66	76	6.92 + 4.1	9	4,003	ne.	24	s.	25	8	22	1	4.5	77.0 1884	73.0 1889	
Titusville	44	7	29.99	30.03	.....	73.6 — 2.1	90	24	82	49	21	65	27	66	75	0.98 — 4.4	9	8,568	e.	36	nw.	19	16	15	0	3.5	75.3 *	73.1 1889	
Eastern Gulf States.						72.9 — 0.1										2.76 — 1.6														
Atlanta	1,131	16	28.83	30.01	— .04	68.8 — 0.0	88	17	79	39	20	59	30	55	68	1.49 — 2.2	6	6,477	nw.	36	nw.	19	8	13	10	5.7	72.0 1887	66.1 1885	
Pensacola	56	15	29.94	30.00	— .02	73.3 — 0.8	87	10	80	48	20	66	24	63	70	2.57 — 1.0	7	6,800	sw.	39	sw.	31	21	8	2	3.1	76.1 1881	71.4 1889	
Mobile	57	24	29.95	30.01	.00	74.0 — 0.1	90	11	83	52	21	65	27	64	75	1.44 — 3.2	11	5,413	n.	30	nw.	18	10	17	4	4.5	76.6 1881	70.5 1889	
Montgomery	257	22	29.73	30.00	— .02	73.8 + 0.5	94	9	85	45	20	63	30	60	68	2.56 — 1.7	10	4,448	w.	32	w.	30	8	20	3	4.6	75.7 1887	70.1 1885	
Meridian	358	....	29.62	30.00	.....	71.3	90	17	83	41	20	60	36	61	72	2.45	8	4,025	sw.	27	nw.	18	8	19	4	4.9	.....	.....	.....
Vicksburg	254	23	29.70	29.97	— .03	72.4 — 0.6	88	29	82	50	20	63	27	61	74	6.71 + 1.8	13	5,034	sw.	36	e.	12	22	7	2	3.0	76.2 1881	71.0 1883	
New Orleans	54	24	29.94	30.00	+ .01	75.3 + 0.2	90	28	83	55	20	67	22	64	70	1.79 — 3.5	5	5,011	se.	32	n.	19	21	8	2	2.8	76.8 1881	72.5 1877	
Port Eads	.....	.....	.....	.....	.....	75.0	86	29	80	60	20	70	17	.....	.....	0.52	3	.....	e.	.....	.....	...	6	18	7	....	.....	.....	.....
Western Gulf States.						73.6 + 0.6										2.11 — 2.6														
Shreveport	249	23	29.71	29.97	— .01	73.9 — 0.4	92	28	83	51	20	65	26	62	71	1.84 — 2.6	5	4,909	s.	35	nw.	18	15	11	5	4.2	76.1 1880	70.2 1891	
Fort Smith	492	12	29.47	29.98	+ .04	69.2 — 0.1	88	6	79	40	20	59	32	60	73	2.53 — 1.9	7	4,599	e.	30	n.	8	10	11	10	5.1	72.8 1886	65.6 1885	
Little Rock	302	15	29.66	29.98	.00	70.3 — 0.0	90	17	79	46	19	61	26	59	72	3.81 — 1.6	8	5,559	s.	34	nw.	18	6	16	9	5.9	74.8 1880	66.1 1882	
Corpus Christi	20	8	29.93	29.95	— .02	76.2 + 0.5	88	18	80	63	20	72	15	70	81	1.63 — 1.8	4	10,020	se.	35	n.	31	5	18	8	5.8	76.7 1892	73.9 1889	
Galveston	42	24	29.90	30.00	+ .02	77.0 + 1.0	88	18	81	62	19	73	13	66	72	1.00 — 3.3	2	8,500	s.	44	se.	1	29	2	0	1.2	78.1 1872	73.7 1889	
Palestine	511	13	29.45	29.99	.00	74.1 + 2.4	92	28	84	50	20	64	30	63	73	1.83 — 4.6	7	4,587	sw.	20	se.	12	14	15	2	4.3	74.4 1894	69.4 1885	
San Antonio	679	17	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	...	.....	.....	.....	....	79.9 1879	70.7 1885	
Ohio Val. & Tenn.						64.3 — 1.0										3.56 — 0.3														
Chattanooga	762	16	29.22	30.02	.00	67.7 — 0.6	89	7	77	40	20	58	30	56	72	1.53 — 2.8	14	5,000	sw.	34	s.	2	2	18	11	6.4	71.0 1881	64.5 1882	
Knoxville	980	24	28.96	30.00	— .03	66.2 — 0.0	90	3	76	34	20	57	29	54	70	3.85 — 0.0	13	3,771	sw.	24	sw.	5	8	15	8	5.5	70.5 1880	63.0 1882	
Memphis	330	24	29.06	30.01	+ .02	69.0 — 1.0	90	17	78	44	19	60	28	60	79	5.70 + 1.5	13	5,251	nw.	36	nw.	18	17	8	6	3.9	74.2 1880	67.1 1882	
Nashville	553	24	29.41	29.99	.00	66.3 — 1.7	90	17	75	40	21	58	28	56	71	2.53 — 1.1	12	3,944	nw.	36	nw.	7	7	14	10	6.1	73.4 1880	65.0 1882	
Lexington	989	11	28.92	29.96	.....	62.4 — 1.0	86	16	72	32	20	53	31	51	69	3.81 + 0.8	20	7,781	sw.	48	sw.	5	8	14	9	5.9	65.1 1876	61.1 1893	
Louisville	525	23	29.41	29.98	— .01	64.6 — 1.5	90	17	74	38	20	55	32	52	68	3.90 + 0.1	18	5,722	s.	38	sw.	1	7	14	10	6.1	71.6 1881	62.5 1882	
Indianapolis	766	24	29.15	29.97	— .03	61.7 — 1.2	89	16	71	35	19	52	33	50	70	4.52 + 0.3	16	4,812	nw.	35	sw.	17	2	15	14	6.8	70.2 1881	59.6 1891	
Cincinnati	628	24	29.30	29.96	— .03	63.0 — 1.5	87	17	72	35	20	54	29	49	66	2.33 — 1.2	17	5,455	nw.	37	sw.	6	10	11	10	5.3	70.6 1881	59.6 1891	
Columbus	868	16	29.05	29.97	— .02	60.6 — 1.1	87	17	70	36	20	51	31	50	73	2.78 — 1.9	20	6,674	sw.	36	w.	18	6	17	8	6.0	68.7 1880	57.0 1882	
Pittsburg	820	24	29.09	29.96	— .04	61.6 — 0.9	87	17	72	40	29	51	34	54	78	4.03 + 1.3	19	4,544	nw.	27	sw.	8	10	8	13	5.8	68.0 1880	57.2 1882	
Parkersburg	638	6	29.28	29.96	.....	62.8	89	17	74	38	29	52	36	51	68	3.31	17	3,822	se.	34	sw.	6	9	17	5	5.4	62.8 1894	58.9 1891	
Lower Lake Region.						66.5 + 0.2										3.16 + 1.9														
Buffalo	690	24	29.20	29.95	— .03	54.6 + 0.9	82	10	62	39	29	47	36	45	70	6.08 + 2.9	18	7,215	sw.	44	w.	7	11	12	8	5.4	61.6 1887	49.3 1882	
Oswego	335	24	29.57	29.93	— .00	53.5 — 0.3	82	1	61	36	29	46	31	44	71	4.66 + 2.0	17	7,045	w.	40	se.	20	9	7	15	6.2	61.5 1880	50.4 1882	
Rochester	523	24	29.41	29.96	.00	56.3 + 0.8	86	1	65	36	29	48	34	46	72	6.87 + 3.8	20	5,347	sw.	40	sw.	7	8	15	8	6.5	64.2 1880	50.1 1882	
Erie	714	21	29.17	29.93	— .05	56.8 + 1.1	85	10	65	40	20	49	36	48	76	4.91 + 1.4	21	7,359	sw.	32	ne.	20	8	15	8	5.7	64.7 1880	51.3 1882	
Cleveland	740	24	29.15	29.94	— .06	58.0 + 1.3	84	10	66	39	20	50	31	48	74	4.83 + 1.5	21	8,458	se.	41	sw.	7	6	14	11	6.0	65.6 1880	51.9 1882	
Sandusky	629	16	29.28	29.96	— .04	58.3 — 0.2	85	10	66	40	19	50	31	48	72	3.64 + 0.1	18	7,056	sw.	40	sw.	18	4	16	11	6.4	66.8 1880	52.8 1882	
Toledo	674	24	29.22	29.94	— .04	58.0 — 0.7	85	17	67	34	19	49	31	48	74	5.36 + 2.0	22	7,562	w.	37	nw.	18	6	11	14	6.5	67.4 1880	53.4 1882	
Detroit	724	24	29.15	29.93	— .06	56.2 — 1.4	83	17	64	34	19	48	30	46	73	4.90 + 1.4	19	8,002	sw.	36	w.	7	8	13	10	5.8	64.1 1881	53.2 1882	
Upper Lake Region.						61.1 — 0.6										5.66 + 2.3														
Alpena	609	22	29.28	29.95	— .02	48.5 — 0.5	78	12	56	30	19	41	34	43	83	5.99 + 2.4	19	7,914	se.	37	w.	7	5	10	16	6.9	55.1 1881	44.4 1882	
Escanaba	.....	23	.....	.....	.....	48.3 — 1.7	73	24	56	29	28	41	34	.....	.....	2.98 — 0.6	14	.....	nw.	.....	.....	...	5	5	21	....	55.4 1880	44.4 1890	
Grand Haven	628	23	29.25	29.93	— .03	52.6 — 1.3	80	16	61	33	18	44	35	45	78	6.35 + 2.9	16	7,880	sw.	30	sw.	17	8	11	12	6.0	61.6 1881	50.1 1888	
Marquette	734	23	29.16	29.96	— .02	46.6 — 1.4	76	12	53	29	28	40	26	37	73	8.09 + 5.4	20	8,900	nw.	41	se.	15	6	7	18	6.8	57.2 1880	42.2 1890	
Port Huron	639	20	29.24	29.94	— .04	52.8 + 0.4	81	17	62	34	29	44	29	44	75	6.97 + 3.7	20	9,627	ne.	48	w.	7	10	8	13	5.9	60.8 1880	47.6 1882	
Sault Ste. Marie	642	6	29.24	29.94	.....	47.7	75	26	56	30	4	39	35	38	74	3.38	21	7,167	se.	32	ne.	18	2	7	22	7.8	48.7 1889	43.4 1890	
Chicago	824	24	29.07	29.95	— .02	56.1 — 0.2	88	16	64	35	18	48	35	46	72	3.35 — 0.5	13	13,450	ne.	62	e.	18	12	11	8	5.0	64.2 1880	51.7 1882	
Milwaukee	673	24	29.22	29.94	— .04	53.9 + 0.5	87	16	62	34	18	46	38	47	83	4.66 + 1.2	14	8,631	ne.	40	ne.	18	8	15	8	5.8	61.1 1880	47.6 1888	
Green Bay	617	8	29.28	29.95	— .03	53.2 — 0.2	87	17	62	33	30	45	30	42	68	6.93 + 4.0	15	8,826	n.	48	n.	18	5	12	14	7.0	62.0 1887	49.1 1890	
Duluth	656	24	29.24	29.96	.00	48.2 — 0.0	80	25	56	30	*	40	36	37	70	5.62 + 2.0	15	5,858	ne.	38	nw.	7	12	6	13	5.6	52.7 1871	42.2 1888	
North Dakota.						54.7 + 1.3										2.10 — 0.2														
Moorhead	935	14	28.92	29.92	— .01	55.7 + 2.6	95	13	68	32	8	44	42	43	64	2.83 + 0.2	7	8,818	n.	42	nw.	7	10	14	7	5.1	60.0 *	47.2 1892	
Saint Vincent	804	14	29.10	29.95	+ .01	52.8 — 0.9	81	24	66	28	27	40	44	40	65	1.64 — 0.3	4	7,599	e.	40	nw.	7	17	7	7	4.0	58.1 1881	45.2 1890	
Bismarck	1,681	20	28.15	29.94	+ .05	55.4 + 1.1	85	13	67	34	3	44	34	42	62	0.77 — 1.8	5	10,400	ne.	54	ne.	16	24	4	3	3.2	60.1 1881	46.3 1892	
Williston	1,874	16	27.93	29.90	+ .01	54.5 + 0.5	81	28	66	30	10	43	36	37	54	3.15 + 1.3	14	10,739	se.	52	w.	14	13	4	14	5.6	58.3 1887	47.2 1892	
Upper Miss. Valley.						62.3 + 0.8										2.99 — 1.2														
Minneapolis	.....	.....	.....	.....	.....	58.9	86	14	70	38	19	48	33	.....	.....	4.77	12	.....	ne.	.....	.....	...	12	11	8	....	.....	.....	.....
Saint Paul	850	24	29.03	29.94	+ .01	58.2 + 1.0	86	14	68	38	19	48	33	42	58	6.63 + 3.3	11	6,696	nw.	35	nw.	7	12	5	14	5.3	64.1 1887	49.8 1888	
La Crosse	720	22	29.17	29.94	.00	60.4 + 2.4	86	15	70	39	19	50	36	44	59	2.92 — 0.3	13	6,701	n.	36	w.	7	11	18	2	4.5	67.7 1881	51.7 1888	

TABLE I.—*Climatological data for Weather Bureau Stations, May*, 1894—Continued.

Districts and stations.	Elevation above sea-level, feet.	Length of record, years.	Pressure, in inches.			Temperature of the air, in degrees Fahrenheit.									Humidity and precipitation.					Wind.					Clear days.	Partly cloudy days.	Cloudy days.	Average cloudiness, tenths.	Mean temperature data since opening of station.				
			Mean pressure, 8 a. m. and 8 p. m. + 2.	Mean reduced.	Departure from normal.	Mean max. and min. + 2.	Departure from normal.	Maximum.	Date.	Mean minimum.	Minimum.	Date.	Mean minimum.	Greatest daily range.	Mean temperature of the dew-point.	Mean relative humidity, per cent.	Precipitation, in inches.	Departure from normal.	Days with .01, or more.	Total movement, miles.	Prevailing direction.	Maximum velocity. Miles per hour.	Maximum velocity. Direction.	Maximum velocity. Date					Highest for month.	Year.	Lowest for month.	Year.
Up. Miss. Val.—Con.		•																													
Davenport	613	23	29.30	29.94	— .03	61.4	+ 1.0	87	16	71	36	20	52	28	49	66	1.93	— 2.6	7	6,790	sw.	40	sw.	6	10	12	9	5.3	69.0	1881	55.2	1888
Des Moines	869	16	29.03	29.95	+ .01	62.0	+ 0.8	90	16	73	36	19	51	35	43	55	1.41	— 3.6	9	6,709	sw.	32	sw.	5	21	9	1	3.1	67.4	1880	54.5	1888
Dubuque	651	21	29.24	29.93	— .03	61.5	+ 2.3	89	15	71	40	•	52	31	52	74	1.75	— 2.3	9	5,017	nw.	31	nw.	6	10	13	8	5.1	67.7	1881	53.9	1888
Keokuk	613	23	29.30	29.95	.00	63.2	+ 1.0	88	15	72	38	19	54	27	50	66	3.06	— 1.1	7	5,763	n.	36	se.	1	14	13	4	4.0	69.8	1881	56.8	1882
Cairo	359	23	29.59	29.98	+ .02	65.7	— 1.4	87	17	74	41	19	57	25	58	79	2.79	— 1.0	11	6,179	s.	40	w.	2	6	16	9	5.5	72.7	1880	63.8	1882
Springfield, Ill	644	15	29.28	29.96	— .03	62.4	.00	88	15	72	36	20	52	28	51	70	2.80	— 2.4	12	6,356	n.	34	nw.	6	7	15	9	5.8	69.3	*	57.9	1882
Hannibal	534	....	29.39	29.96	.....	62.8	.....	88	16	73	39	31	53	30	51	66	2.93	.....	9	6,528	n.	44	e.	9	13	10	8	5.0	....	....	.....	....
Saint Louis	571	24	29.36	29.97	+ .01	66.0	.00	92	16	75	40	19	57	24	55	72	3.61	— 0.5	11	7,981	s.	42	sw.	17	14	9	8	4.4	71.4	1887	59.5	1882
Missouri Valley.						63.3	+ 2.0										1.95	— 2.7													
Columbia	.....	....	.....	.....	.....	64.4	.....	89	16	77	36	20	52	28	.....	.....	4.33	.....	11	4,520	se.	26	s.	4	7	13	11	5.7	....	....	.....	....
Kansas City	963	6	28.96	29.97	+ .03	64.9	+ 0.4	90	16	75	39	19	55	30	50	62	2.08	— 2.2	7	6,835	s.	34	nw.	18	12	16	3	4.4	64.9	1894	59.8	1892
Springfield, Mo	1,336	9	28.55	29.96	— .01	64.6	— 2.6	87	16	74	38	19	55	31	52	68	6.48	+ 0.1	10	6,427	s.	28	n.	10	7	20	4	4.8	64.6	*	59.7	1882
Topeka	.....	7	.....	.....	.....	65.6	+ 4.2	89	16	77	37	19	54	34	.....	.....	1.91	— 3.8	8	.....	s.	....	.....	...	15	12	4	....	65.6	1894	59.6	1892
Omaha	1,123	24	28.78	29.96	+ .06	64.6	+ 2.6	91	15	76	38	19	53	38	43	52	0.61	— 3.9	7	7,220	n.	30	w.	17	10	13	8	5.0	69.4	1880	54.2	1892
Valentine	2,613	9	27.22	29.91	— .04	60.8	+ 3.8	95	15	74	35	3	48	39	40	53	0.17	— 3.6	4	9,588	n.	48	nw.	17	8	20	3	5.2	61.1	1887	48.4	1892
Sioux City	1,165	....	28.70	29.92	.....	62.4	.....	94	15	75	33	19	50	41	42	52	1.91	.....	9	9,783	s.	42	s.	11	17	10	4	3.8	....	....	.....	....
Pierre	1,470	20	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	64.3	1887	49.4	1892
Huron	1,310	13	28.53	29.91	— .02	59.4	+ 3.9	96	15	75	33	8	44	50	41	54	0.43	— 3.9	6	10,705	se.	63	s.	11	12	15	4	4.1	62.1	1887	48.4	1892
Northern Slope.						56.8	+ 2.9										1.58	— 0.9													
Havre	2,477	14	27.27	29.85	— .06	55.6	+ 2.3	86	30	68	28	10	43	43	38	57	2.33	+ 0.9	7	7,489	e.	44	w.	14	10	12	9	5.5	57.0	1884	48.0	1892
Miles City	2,374	17	27.38	29.84	.....	58.6	+ 2.2	87	28	71	27	10	46	41	38	49	3.52	+ 1.3	8	6,320	ne.	36	ne.	28	9	12	10	5.4	64.6	1886	49.0	1892
Helena	4,108	15	25.78	29.94	+ .01	54.8	+ 1.8	81	30	66	31	10	44	38	33	50	1.66	+ 0.2	12	6,586	sw.	34	sw.	3	14	11	6	4.3	55.4	1881	47.7	1892
Rapid City	3,280	10	26.57	29.89	— .04	58.5	+ 5.4	91	14	71	34	10	46	38	37	49	0.72	— 3.6	6	8,094	se.	44	nw.	16	7	18	6	5.6	59.7	1881	47.2	1892
Cheyenne	6,105	24	24.00	29.92	.00	54.0	+ 2.7	82	28	66	27	3	42	36	40	64	1.24	— 0.9	8	9,642	s.	50	w.	16	5	22	4	5.4	55.9	1874	45.7	1882
Lander ‡	5,377	12	24.59	29.91	.....	54.2	+ 2.3	81	28	70	20	10	39	49	28	45	1.22	— 1.3	6	4,831	w.	38	sw.	5	3	21	7	6.1	59.2	1886	46.8	1892
North Platte	2,841	20	27.05	29.95	+ .02	62.0	+ 3.5	94	15	75	33	19	49	38	41	51	0.39	— 2.6	3	9,058	se.	44	nw.	17	8	21	2	4.5	63.0	1886	52.1	1892
Middle Slope.						60.9	+ 1.5										3.76	+ 0.4													
Colorado Springs	6,098	15	24.02	29.97	.....	55.6	+ 0.7	80	14	68	29	1	43	37	30	47	7.34	+ 4.5	12	7,876	n.	48	sw.	15	8	13	10	5.9	62.5	1886	49.8	1884
Denver	5,287	23	24.74	29.93	+ .01	59.0	+ 2.4	85	28	71	35	1	47	35	34	45	3.00	+ 0.2	9	6,606	nw.	48	w.	16	8	17	6	5.4	61.0	*	51.5	1892
Pikes Peak	.....	17	17.82	.....	.....	45.6	.....	40	20	31	6	16	20	22	15	67	7.70	.....	15	15,932	w.	77	sw.	15	7	12	12	6.4	27.1	1886	18.4	1877
Pueblo	4,734	6	25.22	29.92	.....	61.4	.....	88	14	76	28	1	46	47	29	42	3.76	.....	7	6,916	w.	43	w.	9	7	17	7	5.4	61.4	1894	57.1	1893
Concordia	1,410	10	28.49	29.96	+ .01	64.0	+ 1.5	89	15	76	34	19	52	38	48	60	3.74	— 0.5	7	6,378	s.	38	s.	15	16	13	2	3.3	66.2	*	55.8	1892
Dodge City	2,523	20	27.30	29.94	+ .03	64.9	+ 1.5	89	27	78	37	19	52	37	45	54	0.95	— 2.6	9	9,805	se.	47	s.	15	16	12	3	3.7	68.3	1879	56.5	1882
Wichita	1,366	6	28.53	29.95	.....	66.3	.....	88	16	77	38	19	55	34	50	60	2.02	.....	5	6,498	s.	34	sw.	4	13	9	9	4.4	66.3	1894	61.7	1892
Oklahoma City	1,239	....	28.68	29.98	.....	68.2	.....	89	5	78	40	19	58	33	56	69	1.87	.....	8	6,528	s.	34	nw.	18	16	8	7	3.8	....	....	.....	....
Southern Slope.						.....	.....										.....	.....													
Abilene	1,749	9	28.14	29.93	+ .01	73.9	+ 2.1	99	5	84	51	•	64	30	54	58	6.49	+ 2.2	6	8,382	se.	40	nw.	9	9	12	10	5.2	77.2	1886	68.8	1891
Amarillo	3,691	....	26.23	29.93	.....	65.0	.....	88	15	75	45	19	55	34	40	51	1.30	.....	10	14,199	s.	60	s.	4	8	13	10	5.8	....	....	.....	....
Southern Plateau.						70.4	0.0										0.51	+ 0.2													
El Paso	3,796	16	26.13	29.88	— .01	73.4	+ 0.1	96	27	88	45	1	59	40	14	18	0.01	— 0.3	1	7,233	nw.	35	ne.	25	14	15	2	3.1	76.8	1886	69.0	1884
Santa Fe	7,051	22	23.27	29.91	.00	58.8	+ 2.5	80	27	70	37	1	47	33	14	26	1.99	+ 1.2	5	6,142	sw.	38	sw.	15	16	11	4	3.7	60.0	1879	52.5	*
Tucson	2,390	11	27.37	29.84	.....	72.3	— 1.7	100	18	91	43	5	54	47	23	18	0.05	0.0	3	5,672	se.	34	sw.	14	23	7	1	2.2	79.0	1879	68.6	1885
Yuma	141	19	29.64	29.78	— .06	77.1	— 0.7	102	8	93	50	16	61	42	42	36	T.	0.0	0	5,853	w.	34	nw.	28	23	8	0	2.1	81.8	1876	74.2	1891
Middle Plateau.						67.5	+ 1.3										1.27	0.0													
Carson City	4,720	7	25.21	29.93	.....	55.3	+ 0.4	79	24	69	22	16	42	40	29	41	1.07	0.0	7	.....	.....	.....	.....	...	25	3	3	2.8	57.0	1890	52.2	1893
Winnemucca	4,340	16	25.58	29.91	— .02	55.4	+ 1.5	84	25	68	25	2	42	41	26	41	1.52	+ 0.7	9	7,976	sw.	44	sw.	19	9	13	9	5.0	58.1	1890	51.0	1880
Salt Lake City	4,345	21	25.62	29.96	+ .03	61.2	+ 1.9	85	18	72	33	3	51	39	31	38	1.22	— 0.6	5	5,387	se.	30	w.	21	12	16	3	4.3	61.6	1886	53.8	1880
Northern Plateau.						58.3	+ 1.5										1.43	— 0.2													
Baker City	3,430	5	26.39	29.89	.....	53.8	.....	82	30	65	27	2	43	37	39	64	2.43	.....	11	3,704	nw.	30	n.	18	11	7	13	5.5	56.0	1891	49.8	1893
Idaho Falls	4,742	5	25.10	29.89	.....	54.9	.....	83	26	69	22	10	41	46	32	51	1.34	.....	7	7,175	sw.	36	sw.	5	3	17	11	6.3	54.9	1894	49.4	1893
Spokane	1,930	14	27.91	29.93	— .02	57.2	+ 0.4	90	•	68	30	1	46	37	38	55	1.01	— 0.3	10	5,261	sw.	36	sw.	27	3	10	18	6.9	59.8	1884	53.1	1881
Walla Walla	1,018	9	28.89	29.96	+ .02	59.4	— 1.4	92	25	70	35	9	48	33	45	62	1.85	0.0	11	4,794	s.	26	sw.	5	12	11	8	4.9	64.8	1888	57.0	1893
N. Pac. Coast Region.						52.3	+ 2.0										2.66	— 0.1													
East Clallam	.....	....	.....	.....	.....	50.6	.....	87	23	60	31	9	42	41	.....	.....	3.67	.....	11	.....	w.	....	.....	...	12	3	16	....	....	....	.....	....
Fort Canby	179	11	29.83	30.03	+ .01	50.8	— 1.8	72	22	56	38	1	46	22	44	81	1.82	— 0.8	14	7,589	n.	48	s.	26	12	5	14	5.7	55.1	1889	50.4	1893
Neah Bay	.....	10	.....	.....	.....	50.7	— 2.7	70	27	59	33	•	42	24	.....	.....	6.86	+ 2.4	12	.....	w.	....	.....	...	7	8	16	....	54.7	1889	50.7	1894
Olympia	52	17	.....	.....	.....	55.2	+ 0.5	92	25	67	30	9	44	44	.....	.....	1.56	— 0.8	12	.....	nw.	....	.....	...	7	9	15	....	57.4	1888	50.3	1880
Port Angeles	29	10	29.99	30.02	+ .03	49.8	— 0.8	81	25	56	32	9	44	31	42	77	1.96	+ 0.9	11	4,492	w.	27	w.	8	6	15	10	5.8	52.2	1889	49.0	1886
Port Crescent	.....	....	.....	.....	.....	.....	.....	.....	.....	.....	31	1	41	.....	.....	.....	2.41	.....	12	.....	w.	....	.....	...	16	8	7	....	....	....	.....	....
Pysht	.....	....	.....	.....	.....	50.4	.....	77	25	60	30	•	41	31	.....	.....	3.24	.....	15	.....	w.	....	.....	...	13	3	15	....	....	....	.....	....
Seattle	119	....	29.88	30.01	.....	53.4	.....	84	23	61	37	10	46	27	44	76	1.99	.....	14	4,647	se.	29	s.	4	5	20	6	5.7	....	....	.....	....
Tatoosh Island	86	11	29.94	30.04	+ .03	48.1	— 2.4	63	23	52	36	7	44	13	44	87	4.12	— 0.1	16	9,251	sw.	57	ne.	23	8	3	20	7.1	53.9	1889	45.0	1890
Astoria	.....	10	.....	.....	.....	53.0	— 2.3	77	23	60	37	•	46	26	.....	.....	2.10	— 1.2	15	.....	w.	....	.....	...	10	5	16	....	57.6	1889	52.5	1893
Portland	157	23	29.86	30.03	— .02	55.5	— 4.0	89	23	64	32	9	46	32	43	68	1.09	— 1.4	9	6,822	nw.	42	sw.	25	11	9	11	5.5	62.3	1888	53.0	1880
Roseburg	523	17	29.42	29.98	— .08	55.6	— 2.1	84	24	67	32	16	44	37	43	71	1.73	0.0	10	2,833	n.	24	s.	25	9	10	12	5.7	60.1	1888	52.6	1880
Mid. Pac. Coast Reg.						59.2	— 1.8										1.44	0.0													
Eureka	64	8	29.96	30.02	— .01	51.0	— 2.5	63	26	56	36	•	46	19	48	93	1.31	— 1.6	8	5,557	nw.	42	n	9	10	14	7	5.1	54.8	1889	51.0	1894
Red Bluff	342	17	29.55	29.91	— .04	66.8	— 1.1	95	29	78	43	16	55	34	46	56	1.46	+ 0.2	9	5,925	nw.	35	nw.	9	18	7	6	3.9	70.4	1885	62.8	1879
Sacramento	71	17	29.83	29.91	— .05	63.7	— 1.1	88	6	74	40	16	53	32	48	64	1.70	+ 0.8	7	7,294	sw.	42	sw.	25	15	8	8	3.9	65.7	1885	60.2	1879
San Francisco	153	24	29.80	29.96	— .04	55.4	— 2.6	72	17	61	44	16	50	21	47	79	1.31	+ 0.6	6	9,425	sw.	36	sw.	12	11	8	12	5.1	59.8	1890	54.3	1871
Point Reyes Light	.....	....	.....	.....	.....	51.4	.....	66	24	58	40	•	45	22	.....	.....	2.31	.....	7	.....	nw.	....	.....	...	8	0	23	....	....	....	.....	....
S. Pac. Coast Region.						62.1	— 2.3										0.48	+ 0.1													
Fresno	338	7	29.52	29.88	— .04	67.6	— 0.6	95	6	82	40	16	54	38	44	51	1.16	+ 0.8	4	5,352	nw.	34	nw.	30	15	13	3	3.7	69.6	1889	66.9	1893
Los Angeles	330	17	29.61	29.96	.00	60.2	— 3.0	80	17	70	46	16	50	32	50	80	0.20	— 0.2	3	3,077	w.	18	w.	27	5	20	6	5.5	65.6	1885	60.2	1894
San Diego	93	23	29.87	29.97	— .01	58.6	— 3.2	72	17	65	45	16	53	24	51	80	0.09	— 0.3	2	4,228	w.	18	nw.	15	14	10	7	4.4	63.3	1885	58.6	1894

NOTE.—The data at stations having no departures are not used in computing the district averages. Letters of the alphabet denote number of days missing from the record.
• Two or more directions, dates, or years. † Received too late to be considered in departures, etc. ‡ Normals of temperature and precipitation and extremes of temperature combined with Fort Washakie records. ‖ All temperature and precipitation normals and extremes of temperature are obtained from Fort Buford records.

TABLE II.—*Meteorological record of voluntary and other co-operating observers, May*, 1894.

Stations.	Temperature. (Fahrenheit.) Max.	Min.	Mean.	Precip'n.
Alabama.	°	°	°	*Ins.*
Aico	91	44	72.4	.....
Bermuda *†§	93	40	72.3	1.79
Birmingham †	97[d]	55[d]	74.0[d]	3.27
Brewton †	98	40	71.6	4.65
Carrollton *†‡	84	50	71.1	1.02
Citronelle †	87	48	74.0	4.66
Claiborne Landing †	.....	.....	.....	2.20
Clanton †	90	40	71.9	2.16
Cordova †	.....	.....	.....	2.05
Daphne †	95	40	71.6	1.66
Decatur *b*	95	40	70.0	1.74
Demopolis †	.....	.....	.....	1.30
Elba *†	87	45	72.5	3.60
Eufaula *a †	92	46	73.6	2.25
Eufaula *c †	.....	.....	.....	1.89
Evergreen	89	41	72.2	2.73
Florence *a †	.....	.....	.....	2.91
Florence *b †	91	42	68.6	2.60
Fort Deposit †	94	42	73.8	1.65
Gadsden †	91	44	69.9	1.92
Greensboro †	92	43	71.7	1.44
Healing Springs †	90	34	70.2	1.93
Highland Home †	90	40	72.6	0.75
Livingston †	95	42	73.5	1.44
Lock No. 4	.....	.....	.....	4.15
Madison Station †	90	43	70.7	0.65
Maple Grove †	93	40	69.2	1.21
Marion †	92	42	73.6	2.46
Mount Willing †	91	43	72.6	3.73
Newbern †	92	45	73.0	2.57
Newburg †	92	39	68.8	2.02
Newton †	93	42	72.3	5.92
Opelika †	94	44	74.4	1.98
Oxanna *†‡	91	42	67.6	2.92
Pine Apple †	98	42	74.3	2.45
Pushmataha †	88	48	73.2	2.88
Rock Mills †	93	43	70.2	1.75
Scottsboro †	91	42	67.8	1.02
Selma †	.....	.....	.....	2.64
Starlington *†‡	92	40	72.2	2.30
Sturdevant †	.....	.....	.....	2.47
Talladega *b †	94	44	71.1	2.22
Tallassee Falls †	.....	.....	.....	1.46
Thomasville	91	43	72.9	2.90
Tuscaloosa †	94	40	72.5	0.69
Tuscumbia	92	42	71.0	2.72
Union †	102[d]	40[d]	76.6[d]	0.80
Union Springs *a †	95	42	74.4	1.17
Uniontown	90	44	74.2	1.53
Valley Head †	88	40	67.2	2.74
Warrior †	.....	.....	.....	2.44
Wetumpka	.....	.....	.....	3.74
Wilsonville †	.....	.....	.....	3.52
Alaska.				
Killisnoo †	65	29	43.8	2.85
Metlakahtla †	76	25	47.0	5.22
Arizona.				
Antelope Valley †	.....	.....	.....	0.41
Ariz. Canal Co. Dam	102	52	77.4	T.
Benson *§	100	65	79.6	0.00
Bisbee *†	90	48	69.7	0.00
Buckeye †	100	43	73.2	0.00
Calabasas *†	96	38	67.6	0.00
Casa Grande *§	103	65	81.9	0.07
Dragoon †	.....	.....	.....	0.00
Dragoon Summit *§	92	56	75.5	0.00
Dudleyville †	99	42	72.8	0.47
Eagle Pass *‡	.....	50	67.7	0.35
Farleys Camp §	.....	.....	73.6	0.00
Flagstaff †	80	26	55.8	0.70
Fort Apache	89	33	63.0	0.79
Fort Bowie †	94	49	72.0	T.
Fort Grant	93	38	66.1	0.37
Fort Huachuca	93	40	67.5	T.
Gila Bend *§	101	60	82.3	0.00
Globe †	102	47	74.2	0.22
Holbrook †	92	31	63.4	0.11
Keams Canyon †	86	26	56.8	0.40
Maricopa *‡	105	70	87.8	0.00
Mount Huachuca †	92	45	69.6	T.
Natural Bridge †	.....	.....	.....	0.29
Navajo *§	.....	28	54.2	0.50
Nogales *† §	97	68	81.8	0.00
Oracle †	95	46	71.4	0.26
Oro	.....	.....	.....	0.32
Palomas †	98	42	73.0	0.00
Pantano *§	97	63	78.1	0.00
Parker	105	44	77.5	T.
Peoria †	98	.....	.....	T.
Phœnix *b †	100	48	76.5	0.07
Red Rock *† §	104	62	83.6	T.
Reymert †	98	49	73.1	0.00
Rye †	98	40	68.2	0.30
St. Helena R'h †	96	45	71.6	T.
San Carlos	103	41	72.8	0.31
San Simon *§	103	54	78.0	0.00
Show Low	.....	.....	.....	0.89
Signal †	100	39	74.3	0.00
Tucson *a †	102	48	75.3	0.14
Tucson *b *§	95	.....	82.6	0.15
Walnut Ranch *† ‖	85	53	66.2	0.00
Whipple Barracks	90	25	59.7	0.23
Wilgus †	.....	.....	.....	T. ‡

Stations.	Temperature. (Fahrenheit.) Max.	Min.	Mean.	Precip'n.
Arizona—Cont'd.	°	°	°	*Ins.*
Willcox *§	95	40	70.7	0.00
Yuma *§	102	62	83.1	T.
Arkansas.				
Arkadelphia †	.....	.....	.....	4.72
Arkansas City †	.....	.....	.....	0.77
Bee Branch †	90	40	68.0	3.16
Blanchard Springs †	92	40	72.3	1.49
Brinkley †	88	44	69.4	3.95
Camden *a †	.....	.....	.....	1.55
Camden *b †	93	40	72.6	1.58
Cassville †	88	39	64.4	3.22
Clarksville	.....	.....	.....	1.41
Conway *‖	85	50	68.6	3.36
Corning †	92	39	67.6	8.67
Dallas † §	90	39	69.5	1.04
Dardanelle †	.....	.....	.....	4.33
Fayetteville †	88	35	67.0	3.28
Forrest †	92	45	70.4	4.32
Fulton †	.....	.....	.....	3.59
Gaines Landing †	.....	.....	.....	1.53
Hamburg	89	41	71.4	2.35
Helena *a †	.....	.....	.....	1.77
Helena *b †	90	44	72.2	1.68
Hot Springs *a	95	38	70.8	4.20
Hot Springs (near)	.....	.....	.....	0.50
Keesees Ferry †	92	35	67.6	9.41
Kirby †	87[c]	45[c]	74.2[c]	3.47
Lonoke *‖	96	46	72.8	2.13
Madding[2]	.....	.....	71.6	0.38
Malvern †	86	40	69.0	6.01
Mount Ida †	86	36	68.2	0.51
Mount Nebo †	83	36	63.2	1.91
New Gascony *‖	88[c]	49[d]	71.5[c]	1.41
Newport *a †	.....	.....	.....	7.01
Newport *b	90	44	69.9	6.79
Newport *c †	88	41	67.6	6.82
Osceola †	89	43	67.9	8.02
Ozark †	91	42	71.4	2.33
Pine Bluff	90	44	72.4	0.74
Pocahontas †	90	41	68.0	5.25
Prescott	92	43	73.2	2.72
Rison †	90	39	72.0	0.89
Rogers †	90[c]	38[d]	66.0[d]	5.07
Russellville †	92	40	71.2	4.90
Searcy †	90	40	68.4	3.89
Stuttgart †	90	42	70.6	1.90
Texarkana †	95	43	75.4	3.30
Warm Springs *‖	94	47	69.8	6.70
Washington †	90	47	72.0	2.31
Winslow †	81	40	64.7	4.71
California.				
Adin	83	22	53.8	4.31
Ager	90	32	60.9	3.06
Agnew	84	35	59.3	1.24
Anaheim *§	81	51	63.0	0.10
Anderson *‖	90	46	63.1	1.79
Antioch *	91	48	66.2	1.61
Aptos *§	77	40	57.1	2.50
Arlington Heights	88	42	62.0	0.49
Athlone *§	95	48	68.1	2.47
Auburn *§	90	43	64.3	2.77
Bakersfield *a *§	97	50	74.7	0.02
Barstow †	97	35	69.4	0.22
Beaumont *§	90	40	65.7	0.43
Belmont *§	78	52	62.1	.....
Berendo *§	95	45	69.2	1.82
Berkeley	75	42	57.0	2.01
Bethany *‖	90	45	63.0	1.13
Bishop Creek *§	94	48	74.2	T.
Boca *§	90	20	50.5	0.33
Borden *§	95	46	69.1	1.17
Boulder Creek *§	84	44	59.6	3.26
Brentwood *§	92	50	66.3	1.35
Brighton *§	109	48	72.5	1.89
Byron *§	87	44	60.5	1.59
Caliente *§	92	45	72.2	0.50
Calistoga *§	92	49	65.4	2.01
Campo Seco	.....	.....	.....	4.38
C. Mendocino L. H.	.....	.....	.....	1.74
Capitola *§	78	48	60.0	.....
Castroville *§	78	49	60.2	1.70
Centerville *‖	90	50	62.4	1.94
Chico *§	92	42	63.9	1.80
Chino *§	83	48	61.2	0.21
Cisco *§	67	22	43.2	.....
Claremont †	83	37	59.4	0.42
Cloverdale *‖	90	40	66.4	2.70
Colfax *§	86	32	60.4	3.45
Colton *§	91	44	66.9	0.50
Colusa †	90	39	66.9	2.52
Corning *§	96	52	68.9	1.30
Crescent City	70	35	52.2	0.82
Crescent City L. H.	.....	.....	.....	0.86
Crofton *§	84	50	67.3	0.84
Davisville *a *§	90	50	67.6	1.64
Davisville *b	94	40	66.7	1.85
Deep Creek	.....	.....	.....	1.01
Delano *§	93	50	71.3	0.07
Delta *§	94	48	69.7	3.50
Dinuba *§	90	62	73.9	0.37
Downey *§	84	50	61.4	0.23
Dry Creek *† §	.....	47	63.7	.....
Drytown	90	35	62.0	3.89

Meteorological record of voluntary observers, &c.—Continued.

Stations.	Temperature. (Fahrenheit.) Max.	Min.	Mean.	Precip'n.
California—Cont'd.	°	°	°	*Ins.*
Dunnigan *§	90	52	67.3	1.78
Dunsmuir *§	83	38	63.0	4.35
East Brother L. H.	.....	.....	.....	0.55
Edgwood *§	84	33	57.7	3.56
Edmanton *‖	78	24	49.7	2.85
Eldorado *§	90	44	67.4	3.98
Elmira *§	98	52	68.7	1.08
El Verano *§	87	47	62.9	1.57
Emigrant Gap *§	71	22	48.5	1.60
Esparto *§	95	43	66.1	1.74
Evergreen	.....	.....	.....	1.71
Exeter *§	98	50	70.1	0.33
Fall Brook *‖	82	42	59.3	0.31
Farmington *§	82	50	65.9	2.80
Felton *§	90	38	62.4	2.60
Fernando *§	83	41	59.5	0.32
Florence *§	85	50	64.8	0.11
Florin *§	92	43	64.0	2.37
Folsom City *a *§	94	48	66.3	1.71
Folsom City *b *‖	94	48	67.6	2.81
Fort Ross	.....	.....	.....	3.01
Fremontville *‖	80	48	59.2	.....
Fresno *§	95	48	70.7	1.30
Fruto *§	92	50	68.9	1.70
Galt *§	94	50	67.0	3.60
Georgetown †	80	33	58.8	5.25
Gilroy *§	86	45	60.1	1.28
Girard *§	88	32	59.2	0.45
Glen Ellen *§	92	45	62.7	2.14
Goshen *§	96	48	74.0	0.08
Grass Valley *a	.....	.....	.....	3.46
Green Valley	.....	.....	.....	1.19
Greenville *† ‖	85	24	54.1	1.45
Gridley *‖	96	46	68.1	3.05
Haywards *§	80	50	60.1	1.47
Healdsburg *‖	80	34	57.2	2.17
Hollister *§	82	48	61.8	1.07
Hornbrook *§	84	40	61.5	3.78
Hueneme	.....	.....	.....	0.40
Humboldt L. H.	.....	.....	.....	1.30
Huron *§	95	45	66.4	0.20
Hydesville †	72	36	53.4	1.62
Independence †	93	57	66.0	0.10
Indio *a *§	102	58	79.4	0.00
Indio *b	100	58	79.3	T.
Ione *§	89	43	68.4	3.39
Iowa Hill *‖	87	38	61.0	4.93
Jackson	86	30	58.0	4.15
Jolon	.....	.....	.....	1.35
Julian †	.....	.....	.....	0.68
Keeler *§	92	40	67.3	T.
Keene *§	85	36	62.5	0.40
Kennedy Gold Mine	86	35	60.5	5.64
Kernville	.....	.....	.....	0.53
King City *§	88	40	62.9	0.66
Kingsburg *§	95	57	73.6	0.19
Knights Landing *§	94	40	70.4	1.91
Kono Tayee	82	40	60.9	0.90
Lagrange *§	98	42	68.2	3.39
La Porte *† ‖	74	28	48.2	2.00
Lathrop *§	90	53	67.4	1.46
Laurel *§	86	40	57.9	4.26
Lemoore *a *§	96	45	69.6	0.29
Lemoore *b	96	43	68.4	0.41
Lick Observatory †	72	27	51.6	2.78
Lime Point L. H.	.....	.....	.....	1.65
Little Bear Valley	.....	.....	.....	1.34
Little Bear Valley (near)	.....	.....	.....	1.35
Livermore *§	87	40	59.7	1.19
Livingston *§	99	47	71.6	2.02
Lodi	89	39	63.0	3.33
Long Beach *§	72	52	60.3	.....
Los Alamos	.....	.....	.....	1.35
Los Angeles *§	82	50	64.6	0.11
Los Banos *§	92	56	71.8	1.06
Los Gatos *a *§	87	48	63.3	1.83
Los Gatos *b	84	36	57.7	2.25
Lower Holcomb Valley	.....	.....	.....	0.79
Mammoth Tank *§	102	62	83.3	0.00
Manzana *‖	91	33	58.9	0.35
Mare Island L. H	.....	.....	.....	0.94
Mariposa *‖	86	39	61.7	2.99
Martinez *§	84	42	57.6	0.73
Marysville *a *§	97	46	66.3	1.86
Mendota *§	93	54	73.4	0.47
Menlo Park *§	86	43	59.7	0.99
Merced *§	95	45	67.4	2.02
Middletown *† ‖	94	36	60.0	2.06
Mills College	.....	.....	.....	1.47
Milton *§	93	43	65.7	2.08
Milton (near) *‖	92	44	65.8	3.21
Modesto *§	92	55	69.3	1.72
Mohave *§	93	40	69.8	0.03
Mokelumne Hill *§	.....	42	60.9	3.41
Monson *§	90	54	71.0	0.41
Montague *§	80	43	61.9	2.50
Monterey *§	74	42	58.6	1.86
Monterey (Hotel del Monte) *§	73	49	58.2	.....
Morses House	.....	.....	.....	2.08
Mount Glenwood *‖	92	48	67.4	1.46
Napa *a *§	80	38	59.4	1.08

Stations.	Temperature. (Fahrenheit.) Max.	Min.	Mean.	Precip'n.
California—Cont'd.	°	°	°	*Ins.*
Napa *b	83	40	63.2	1.49
National City †	76	44	59.6	0.15
Needles †	103	50	80.8	T.
Neenach *‖	90	36	63.8	0.00
Nevada City †	82	30	56.7	3.54
New Almaden *§	90	45	62.4	1.11
Newark *§	86	46	62.0	1.70
Newcastle *a †	87	37	62.1	2.21
Newcastle *b *§	90	40	63.5	1.65
Newhall *§	88	42	61.7	0.60
Newman *§	93	52	72.1	0.83
Niles *§	86	40	62.5	2.32
Nordhoff †	.....	.....	.....	0.97
Norwalk *§	89	52	65.5	0.00
Oakdale *a *‖	91	46	65.3	2.57
Oakdale *b *§	92	46	66.5	2.38
Oakland *a	79	40	58.6	1.89
Oakland *b *§	70	46	56.6	2.23
Ogilby *§	101	57	84.1	0.00
Oleta *‖	83	40	58.8	3.69
Ontario *a *§	85	52	63.6	0.46
Ontario *b	87	40	63.2	0.48
Orangevale †	93	38	65.8	2.51
Orland *§	96	42	66.5	1.08
Oroville *a *§	92	45	67.9	2.85
Oroville *b	94	43	66.6	2.85
Pajaro *§	88	40	57.7	1.90
Palermo †	94	37	66.5	3.41
Palm Springs *§	102	55	80.1	0.00
Paso Robles *a *§	95	45	67.7	1.15
Paso Robles *b	92	38	61.2	1.09
Petaluma *‖	90	47	61.8	0.69
Piedras Blancas L H	.....	.....	.....	2.55
Pigeon Point L. H	.....	.....	.....	1.55
Placerville *a *§	87	36	59.6	4.55
Placerville *b	82	32	56.0	4.70
Pleasanton *a *§	95	44	64.1	1.47
Pleasanton *b	90	32	58.4	1.46
Pt. Ano Nuevo L. H.	.....	.....	.....	2.20
Point Arena L. H	.....	.....	.....	1.63
Point Bonita L. H.	.....	.....	.....	2.44
Pt. Conception L. H.	.....	.....	.....	0.72
Point Fermin L. H.	.....	.....	.....	0.42
Point George L. H	.....	.....	.....	0.11
Pt. Hueneme L. H.	.....	.....	.....	0.53
Point Loma L. H.	.....	.....	.....	0.05
Point Montara L. H.	.....	.....	.....	1.39
Point Pinos L. H.	.....	.....	.....	1.80
Point Reyes L. H.	.....	.....	.....	2.31
Point Sur L. H.	.....	.....	.....	1.55
Pomona *§	82	44	62.4	0.27
Portersville *§	94	52	74.4	0.42
Port Los Angeles *§	68	50	58.5	0.07
Poway *§	.....	51	57.0	0.21
Puente *§	81	42	65.4	0.20
Ravenna *§	89	48	62.0	0.40
Red Bluff *§	95	52	69.0	1.30
Redding *a *§	96	50	68.6	1.31
Redding *b †	89	44	65.3	2.45
Redlands *a	.....	.....	.....	0.64
Redlands *b *§	84	48	63.2	0.62
Reedley (near) *‖	92	48	72.1	0.60
Rio Vista	91	42	65.2	1.23
Riverside	87	39	62.4	0.26
Rocklin *§	94	50	68.7	2.65
Roe Island L. H.	.....	.....	.....	1.05
Sacramento *a	86	37	63.3	2.21
Sacramento *b *§	89	46	65.5	1.79
Sacramento *c *§	85	52	67.7	1.79
Salinas *§	78	45	54.7	1.53
Salton *§	111	55	84.1	0.00
San Ardo *a *§	90	43	62.6	0.68
San Bernardino †	87	38	62.8	0.56
San Gabriel *§	82	50	67.1	0.23
Sanger Junction *§	95	45	70.7	0.60
San Jacinto	95	34	61.6	1.15
San Jose *a *§	86	45	60.8	1.36
San Jose *b	84	32	58.3	1.48
San Luis L. H.	.....	.....	.....	0.65
San Luis Obispo	.....	.....	.....	1.32
San Mateo *§	85	51	62.4	0.61
San Miguel *§	94	44	64.1	0.00
San Miguel Isl'd †	77	45	57.4	0.34
San Pedro *§	75	55	63.4	0.16
San Rafael †	86	33	56.0	1.69
Santa Ana *‡	87	56	67.7	0.13
Santa Barbara *a	74	46	58.0	0.91
Santa Barbara *b *§	76	50	60.5	0.86
Santa Barbara L. H.	.....	.....	.....	0.79
Santa Clara *a *§	81	34	58.6	1.10
Santa Clara *b	90	35	60.6	1.02
Santa Cruz *a *§	74	46	58.7	2.40
Santa Cruz *b †	85	37	59.2	2.36
Santa Cruz L. H.	.....	.....	.....	2.06
Santa Margarita *§	92	43	62.0	2.10
Santa Monica *§	71	47	60.1	0.23
Santa Paula *a *§	74	48	60.8	0.46
Santa Paula *b	74	37	56.2	0.56
Santa Rosa *§	87	47	62.0	1.84
Saticoy †	.....	.....	.....	0.66
Selma *§	98	52	73.2	0.22
Shasta Springs †	88	24	55.5	4.05
Shingle Springs *§	77	40	60.0	3.25
Sims *§	89	36	58.7	3.42
Sisson *§	86	27	56.7	2.85

Meteorological record of voluntary observers, &c.—Continued.

Stations.	Temperature. (Fahrenheit.) Max.	Min.	Mean	Precip'n.
California—Cont'd.	°	°	°	*Ins.*
Soledad *[6]	80	44	60.7	0.62
Sonoma *[4]	85	32	56.2	1.40
S. E. Farrallon L. H	.....	.....	.....	1.05
South Vallejo *[6]	83	49	61.1	0.87
Spadra *[6]	80	50	65.0	0.28
Squirrel Inn	.....	.....	.....	1.37
Stanford Univer'y	84	37	58.8	1.05
Stockton *a*	89	40	63.6	1.84
Stockton *b* *[6]	90	53	67.8	0.89
Suisun City *[6]	93	45	64.2	1.85
Summit *[6]	62	18	43.1	.....
Susanville *†	82	35	55.5	1.55
Sutter Creek *[5]	84	30	57.1	4.50
Tehachapi *a* *[6]	80	45	61.4	0.32
Tehachapi *b*	85	30	56.8	0.35
Tehama *[6]	94	52	69.6	1.01
Templeton *[6]	88	45	60.0	1.42
Towles *[6]	93	32	58.8	2.06
Tracy *[6]	90	49	72.5	2.00
Traver *[5]	97	60	78.5	0.10
Trinidad L. H.	.....	.....	.....	1.76
Tropico *[6]	82	50	61.7	0.34
Truckee *[6]	76	21	47.4	1.05
Tulare *a* *[6]	96	45	71.0	0.23
Tulare *b*	.....	.....	.....	0.36
Tulare *c*	104	36	69.2	0.43
Tunnel No. 2	.....	.....	.....	1.23
Turlock *a* *[5]	92	55	73.2	1.47
Turlock *b* †	94	36	65.8	1.70
Ukiah †	88	32	59.5	1.21
Upper Lake	87	34	61.0	1.02
Upper Mattole *[1]	84	40	58.5	2.05
Vacaville *a* *[1]	95	49	65.3	1.55
Vacaville *b* *[6]	100	49	68.8	1.32
Valley Springs *[6]	93	40	69.9	4.09
Ventura †	74	41	58.9	0.50
Vina *[6]	92	45	68.4	0.96
Volcano Springs *[6]	111	70	89.8	0.00
Walnut Creek	93	36	61.0	0.80
Weaverville †	91	29	60.8	2.22
Wenrich Ranch	.....	.....	.....	1.24
West Butte *	90	40	.....	2.67
Westley *[6]	93	51	70.7	1.19
Wheatland	95	39	65.0	2.58
Whittier *[6]	83	53	65.7	0.00
Williams *[6]	93	45	68.6	1.59
Willows *a* †	88	39	63.5	1.65
Willows *b* *[6]	90	50	68.6	1.10
Wilmington *[5]	74	52	64.8	T.
Winchester	93	34	62.9	0.00
Winters *[6]	93	47	70.8	1.20
Wire Bridge *[5]	88	42	65.2	2.65
Woodland *[6]	90	46	66.5	1.45
Yerba Buena L. H.	.....	.....	.....	1.30
Yreka †	90	24	58.8	3.31
Yuba City *[5]	91	54	67.1	2.26
Colorado.				
Abbott	.....	.....	.....	1.12
Akron †	92	20	60.5	0.57
Alma †	65	17	41.1	2.97
Amherst †	.....	.....	.....	0.08
Avoca	.....	.....	.....	0.51
Box Elder	.....	.....	.....	3.79
Breckenridge †	72	12	42.0	1.29
Brush † [5]	95	38	61.8	0.45
Byers *[1]	84	32	50.1	.....
Canyon †	89	27	60.5	5.86
Castle Rock †	87	32	56.2	4.84
Cheyenne Wells *† [1]	96	34	55.6	2.36
Climax *† [1]	51	16	31.6	4.70
Collbran	.....	.....	.....	0.50
Como (near) †	69	20	43.2	3.10
Cope †	95	35	62.5	1.07
Craig	.....	.....	.....	0.29
Deer Trail *[5]	82	40	62.2	5.00
Delta †	94	28	62.4	0.10
Divide Ex. Station	77	21	50.9	4.55
Downing †	88	23	61.0	1.51
Dumont	74	24	50.2	7.25
First View *[6]	94	.....	64.0	2.87
Fleming	.....	.....	.....	0.19
Fort Collins †	86	27	57.0	3.09
Garnet	.....	.....	.....	1.07
Glen Eyrie †	79	29	55.6	6.72
Glenwood Sp'gs †	85	38	59.0	0.18
Gold Hill *[5]	74	28	51.6	9.00
Grand Junction †	90	39	64.9	0.56
Greeley	.....	.....	.....	1.03
Gunnison †	78	18	49.0	0.66
Holly †	.....	.....	.....	1.43
Hugo *[5]	88	46	64.0	6.50
Hugo (near) †	85	32	55.5	4.10
Husted †	84	26	55.6	4.53
Julesburg	97	34	62.4	0.21
Kit Carson *	96	.....	.....	2.00
La Jara †	82	27	54.4	0.94
Lake Moraine †	63	21	40.6	9.11
La Porte	.....	.....	.....	3.11
Las Animas †	92	30	60.8	1.20
Lavender †	82	24	55.6	0.61
Lay *† [1]	83	33	54.4	0.17
Le Roy *† [1]	95	33	62.1	0.17
Leslie	.....	.....	.....	0.30
Loveland	.....	.....	.....	3.70
Manhattan	.....	.....	.....	3.00
Meeker †	90	20	55.8	0.39
Minneapolis †	93	35	65.0	3.22
Monte Vista	80	18	51.2	1.01
Moraine †	73	25	47.2	5.72
Pagoda (near) †	81	21	50.6	0.39
Paonia	.....	.....	.....	0.45
Parachute †	87	33	61.1	0.08
Red Cliff	.....	.....	.....	0.83
Rico	.....	.....	.....	0.21
River Bend *[6]	90	50	67.2	4.00
Rocky Ford †	93	30	64.0	4.25
Sagauche †	80	25	53.2	1.15
San Luis †	84	22	53.2	1.19
Seibert †	.....	.....	.....	2.52
Smoky Hill Mine †	78	24	50.2	8.62
Springfield †	.....	.....	.....	5.64
Stamford *[1]	71	20	42.6	3.05
Steamboat Spr'gs †	85	16	53.2	1.00
Sunnyside	66	19	42.8	8.46
Surface Creek †	81	31	57.4	0.72
Thon †	91	28	57.0	3.14
T. S. Ranch †	87°	34°	61.0°	0.75
Twin Lakes	.....	.....	.....	1.77
Vernon *	101	45	67.8	0.01
Vilas	.....	.....	.....	3.50
Wallet †	.....	.....	.....	1.19
Ward District	.....	.....	.....	7.40
Watkins *[1]	84	44	61.3	.....
Yuma	.....	.....	.....	0.04
Connecticut.				
Bridgeport *[1]	83	46	58.1	6.12
Canton	86	37	58.1	5.58
Colchester	85	37	57.7	4.03
Greenfield Hill	.....	.....	.....	6.15
Hartford *b*	.....	.....	.....	5.63
Hartford *c*	85	40	58.8	.....
Lake Konomoc	.....	.....	.....	3.91
Lebanon	.....	.....	.....	4.63
Middletown	89	34	59.0	5.29
New Hartford *a* *† [1]	76	42	55.0	5.48
N. Grosvenor Dale	85	36	58.2	4.18
Norwalk	86	34	57.9	4.88
Southington *[1]	85	39	58.6	6.85
South Manchester	.....	.....	.....	5.26
Stevenson	.....	.....	.....	5.08
Storrs	85	37	56.3	3.58
Thompson *[1c]	76	37	54.8	.....
Voluntown †	86	31	58.0	4.25
Wallingford †	.....	.....	.....	4.56
Waterbury	83	37	59.3	7.58
West Simsbury	.....	.....	.....	5.47
Delaware.				
Kirkwood *[2]	84	.....	66.3	.....
Milford	87	45	65.2	6.67
Millsboro	89	42	65.2	7.20
Newark	86	41	62.0	12.67
Seaford	90	42	65.4	6.56
Wilmington †	91	43	66.6	11.99
District of Columbia.				
Dist'ing Reserv'r *[3]	83	46	67.2	3.85
Rec'ing Reserv'r *[3]	83	45	66.1	6.91
West Washington	90	40	67.0	4.28
Florida.				
Amelia †	87	48	72.8	1.05
Archer †	96	46	76.4	2.23
Brooksville †	91	49	74.4	5.78
Clermont †	98	52	76.7	1.37
Eustis †	95	52	77.2	1.69
Federal Point †	92	49	72.6	2.33
Fort Meade †	91	47	74.0	1.23
Gainesville	90	48	73.8	2.29
Grasmere †	92	51	74.9	1.38
Green Cove Sp'gs †	91	46	72.6	0.26
Homeland †	92	49	74.4	2.13
Kissimmee †	97	55	76.2	3.75
Lake City †	94	49	77.0	1.34
Manatee †	93	54	72.3	2.50
Merritts Island †	90	55	76.8	0.74
Moseley Hall †	94	46	75.6	1.33
Mullet Key †	88	56	76.7	3.35
Myers †	90	55	75.4	1.47
New Smyrna †	87[k]	50[k]	69.8[k]	0.44
Oak Hill *[1]	88	54	77.0	.....
Ocala *† [1]	90	55	74.4	3.33
Orange City †	93[k]	52[k]	74.6[k]	0.88
Orange Park	93	45	74.5	2.26
Orlando †	93	51	75.2	3.39
Plant City †	90	44	74.4	2.86
St. Francis B'ks	88	45	71.4	3.80
Tallahassee †	89	45	72.8	2.08
Tarpon Springs †	88	56	73.6	4.40
Georgia.				
Adairsville †	92	41	69.0	1.78
Alapaha †	97	43	74.8	1.60
Albany †	97	43	76.3	2.26
Americus †	98	42	75.8	1.68
Athens *a*	89	42	69.2	2.05
Athens *b*	92	39	70.0	1.86
Bainbridge *a*	97	45	75.4	3.05
Bainbridge *b* †	.....	.....	.....	2.46
Blakely *† [5]	92	45	73.8	3.14
Brag †	98	41	73.8	7.03
Camak	90	40	69.9	3.54
Camilla	91	45	73.0	3.38
Canton †	.....	.....	.....	3.00
Clayton †	86	35	64.0	2.52
Columbus †	95	45	73.8	2.16
Cordele	94	43	73.8	2.27
Covington	92	40	70.4	1.19
Dahlonega †	88	36	65.8	5.56
Darien †	95	44	74.9	3.86
Diamond †	.....	.....	.....	3.59
Dublin *a* †	94	42	73.1	1.56
Dublin *b* †	.....	.....	.....	1.45
Eastman	96	41	75.4	0.76
Elberton †	92	39	71.1	2.08
Fleming †	98	36	65.8	2.12
Forsyth *[1]	94	47	73.9	3.66
Fort Gaines	94	45	74.0	2.92
Gainesville	90	38	67.8	2.70
Gillsville *† [1]	87	42	65.2	2.63
Griffin †	87	39	69.1	1.72
Hawkinsville †	90	40	70.6	2.10
Hephzibah *† [3]	88	44	70.2	4.50
Lafayette †	87	42	66.8	2.23
Lagrange †	91	41	69.9	1.45
Lawrenceville †	94	.....	.....	1.56
Leverett	93	40	70.2	3.19
Lumpkin	.....	.....	.....	2.20
Macon *a*	92	51	75.2	4.06
Macon *b* †	.....	.....	.....	2.05
Marietta †	88	39	67.4	1.61
Marshallville †	89	42	72.8	1.90
Millen †	97	39	73.6	0.80
Monticello *† [1]	87	46	71.8	1.98
Morgan †	93	43	72.9	2.22
Newnan	91	40	70.8	1.34
Piscola	95	45	75.8	0.53
Point Peter *[1]	90	40	69.9	1.70
Poulan †	93	42	72.4	4.33
Quitman	90	45	74.2	1.36
Ramsey †	88	40	66.4	2.56
Resaca †	.....	.....	.....	2.84
Reynolds †	.....	.....	.....	2.20
Rome †	91	43	68.6	2.14
Talbotton †	90	42	71.6	1.00
Thomasville †	95	43	74.6	2.50
Toccoa †	90	40	68.3	4.97
Union Point	90	39	70.3	0.86
Washington †	89	40	71.0	2.45
Way Cross	92	46	74.6	1.71
Waynesboro	98	40	73.4	2.80
West Point †	95	43	73.0	1.84
Whitesburg †	.....	.....	.....	2.71
Idaho.				
American Falls †	91	23	57.6	0.27
Atlanta †	72	16	45.0	1.42
Boise Barracks	90	27	59.2	2.08
Egin †	83	20	51.4	1.32
Fort Sherman † [1]	72	27	49.6	1.20
Fraser †	87	28	54.2	2.14
Garden Valley *† [1]	95	26	55.0	1.36
Grangeville	83	29	53.8	2.30
Hailey	81	27	52.6	0.42
Idaho City †	90°	24°	57.3°	0.83
Kootenai †	82	23	53.7	2.71
Lake †	76	18	48.7	1.72
Lewiston †	91	30	61.0	2.86
Martin †	82	21	51.2	0.20
Moscow †	86	30	54.5	1.53
Murray †	89	24	51.6	4.14
Nampa	91	28	58.0	1.92
Oakley †	91	27	58.8	0.23
Paris †	82	22	53.4	0.45
Payette †	93	26	60.2	0.96
Preston *† [5]	79	32	59.7	0.36
Salubria †	93	27	60.9	1.04
Soldier † †	80	21	49.2	0.31
Illinois.				
Albion †	91	37	64.2	5.32
Aurora †	89	34	58.4	2.76
Beardstown †	.....	.....	.....	2.58
Bloomington †	94	30	61.6	3.21
Braidwood †	87	35	60.6	3.69
Bushnell †	90	35	61.9	2.23
Carlinville †	89	36	63.6	2.33
Carlyle	.....	.....	.....	3.47
Carrollton	88	35	64.5	2.32
Chemung †	91	32	57.8	3.02
Chester †	.....	.....	.....	4.57
Clear Creek †	92	32	61.4	3.20
Decatur †	94	33	63.0	1.90
Dixon †	91	34	59.8	4.28
East Peoria †	90	35	61.7	2.80
Evanston *[10]	90	32	56.3	.....
Fort Sheridan †	88	31	56.7	4.01
Galva †	92	31	61.1	2.18
Golconda †	87	40	65.9	3.07
Grafton †	.....	.....	.....	2.03
Greenville †	92	35	64.8	3.31
Griggsville †	95	35	63.6	2.30
Halliday *[3]	87[d]	43[d]	65.0[d]	2.17
Havana †	91	39	64.3	2.23
Herrins Prairie *[1]	88	40	66.5	3.35
Jordans Grove †	88	35	64.2	3.57
Kankakee †	.....	.....	.....	3.29
Lagrange	88	35	58.3	3.16
Louisville †	86	37	62.8	3.77
Luella	94	38	63.7	5.33
Martinsville †	87	37	61.2	4.37
Mascoutah *[5]	93	36	62.8	4.40
Monmouth †	89	32	61.5	2.10
Mount Carmel †	.....	.....	.....	5.29
Mount Pulaski	89	34	61.7	2.88
Olney *a* *[1]	91	40	64.8	5.20
Olney *b* *[1]	96	38	61.0[e]	5.32
Oregon	92	33	60.8	4.86
Oswego *[1]	90	32	56.5	2.82
Ottawa †	93	34	60.6	4.01
Palestine	.....	.....	.....	5.60
Paris †	89	36	61.8	3.31
Peoria *a* †	.....	.....	.....	4.33
Peoria *b*	93	39	64.6	3.58
Philo †	89	33	60.2	2.20
Rantoul *† [5]	93	36	62.8	4.39
Riley †	88	33	56.9	3.02
Rushville	93	36	64.3	2.47
St. John *[3]	88	44	64.6	3.62
South Chicago *[10]	86	41	59.8	.....
Streator †	89	34	62.2	3.62
Sycamore *† [1]	85	36	57.5	3.90
Tuscola *† [1]	92	37	58.3	2.87
Walnut †	94	34	63.0	3.57
Warsaw †	.....	.....	.....	0.78
Winnebago †	87	33	57.5	3.51
Zion † [1]	88	34	59.1	0.86
Indiana.				
Angola *[1]	89	33	58.2	5.59
Ashboro †	87	37	60.6	4.72
Cambridge City †	85	34	60.0	4.86
Columbia City *[1]	84	36	57.5	3.82
Columbus	86	36	61.8	5.04
Connersville †	85	36	60.0	3.72
Crawfordsville	90	35	61.3	3.03
Degonia Springs *[6]	88	41	64.0	3.94
Delphi	86	33	58.0	6.96
Evansville †	.....	.....	.....	3.38
Farmland †	85	34	60.2	4.27
Franklin *[1]	88	39	61.1	4.43
Hammond †	91	37	58.5	6.23
Huntingburg *† [1]	92	42	66.6	4.61
Huntington	88	36	59.5	3.55
Jasper †	87	41	63.4	2.75
Jeffersonville	88	39	63.7	4.70
Kokomo †	87	35	61.0	3.61
Laconia	89	38	65.0	2.50
Lafayette †	89	37	60.3	5.16
Logansport *a* †	.....	.....	.....	5.64
Logansport *b*	88	34	60.1	4.08
Madison †	88	40	64.4	7.08
Marengo *[1]	88	42	62.8	4.55
Marion †	87	34	60.3	3.80
Markle †	86[k]	33[k]	60.2[k]	3.37
Mauzy	87	34	60.0	3.98
Mount Vernon †	89	39	64.4	4.90
Muncie †	92[d]	40[d]	65.3[d]	6.05
New Albany *† [5]	86	38	64.3	5.12
Plymouth †	88	36	59.1	6.07
Princeton *† [1]	92	39	62.9	3.87
Rockville †	89	37	60.5	3.34
Rushville †	.....	.....	.....	4.06
Scottsburg *[1]	86[d]	39	63.4[d]	.....
Seymour †	90	36	62.1	6.17
South Bend †	87	35	58.3	6.15
Terre Haute †	90	39	63.9	3.03
Valparaiso †	86	32	57.2	6.60
Veedersburg	88[1]	31[1]	61.5[1]	3.90[f]
Vevay	88	35	64.2	4.30
Vincennes †	95	38	66.5	5.22
Worthington †	88	31	61.8	4.85
Indian Territory.				
Eufaula †	.....	.....	.....	0.90
Gwenndale †	91	30	66.6	5.27
Healdton †	96	43	72.0	4.11
Kemp †	98	43	72.8	3.68
Purcell †	97	36	69.0	1.87
Tahlequah †	92	35	69.4	2.35
Tulsa †	.....	.....	.....	4.30
Iowa.				
Albia	90	31	61.7	1.65
Algona *[1]	92	35	60.3	1.20
Alta †	94	33	60.7	1.54
Amana †	89	34	60.1	3.47
Ames *b*	90	29	60.4	0.87
Ames *c*	.....	.....	.....	0.93
Atlantic †	91	22	59.7	1.18
Audubon	90	29	60.8	1.73
Belle Plaine	89	31	60.0	1.99
Bonaparte †	88	34	61.8	2.61
Carroll †	88	26	59.5	1.10
Cedar Falls †	89[e]	33[e]	60.0[e]	1.80
Cedar Rapids †	87	38	61.8	3.08
Centerville †	86	37	64.7	2.71
Charles City †	90	31	59.7	1.22
Clarinda †	88	38	62.1	1.37
Clinton	91	37	61.5	4.77
College Springs	90	33	62.4	1.56
Corning †	88	32	61.4	1.29
Cresco †	86	33	58.1	2.63
Delaware *[3]	87	35	59.4	1.91
Elkader †	91	31	60.4	1.73
Emmetsburg	.....	.....	.....	1.22
Fayette †	88	32	58.6	1.91
Forest City	91	33	58.4	2.57
Fort Madison *† [1]	89	48	66.2	3.49

Meteorological record of voluntary observers, &c.—Continued.

Stations.	Temperature. (Fahrenheit.) Max.	Min.	Mean	Precip'n.
Iowa—Cont'd.	°	°	°	*Ins.*
Galva †	95	29	60.3	2.16
Glenwood †	94	32	66.4	1.00
Grand Meadow *[1]	90	43	59.5	2.34
Greenfield †	90	32	62.0	1.01
Grinnell †	86	35	62.3	2.71
Grundy Center	89	29	59.0	1.51
Hampton	90	32	59.2	1.08
Hawkeye				2.26
Hopeville †	88	34	61.8	1.21
Hopkinton *[5]	89	39	61.4	2.73
Humboldt †				1.75
Independence †	87	32	59.4	1.80
Indianola †	88	32	62.4	1.43
Iowa City †	88	34	60.6	3.09
Iowa Falls †	88	30	57.6	1.63
Keosauqua †	89	37	62.6	2.01
Larrabee †	94	28	60.4	1.18
Le Claire †				2.89
Logan †	96	27	64.0	0.55
Mason City †	91	29	58.4	1.98
Maxon *[1]	90	44	62.4	1.64
Mechanicsville	87	33	59.5	3.07
Monticello †	90	34	60.6	1.55
Mount Pleasant *[1]	83	46	61.9	3.80
Mount Vernon *[1]	86	42	61.4	4.05
Newton	91	32	61.8	1.06
North McGregor †				1.81
Osage *† [2]		42	58.1	2.92
Ottumwa	89	36	62.0	2.86
Ovid †	88	29	61.4	1.23
Panama †	91	32	62.4	1.03
Richland *[1]	92	42	60.9	2.15
Rock Rapids	95	28	60.2	0.33
Rockwell City				0.78
Sac City †	91	32	60.8	2.10
Seymour †	90	31	62.2	0.95
Sibley	93	30	58.6	3.59
Spirit Lake †	95	32	59.4	2.55
Sutherland	95	33	59.8	1.16
Toledo *[1]	94	30	63.5	0.55
Vinton *[1]	87	42	60.8	1.94
Washington †	90	34	60.4	2.54
Webster City *[1]	94	41	63.0	0.95
West Bend *† [1]	90	41	59.4	1.52
Williams *[1]	92	29	59.4	0.86
Winterset †	91	34	62.2	1.44
Kansas.				
Abilene †	91	32	66.2	3.28
Achilles *† [3]	98	32	63.2	1.13
Allison *† [2]	96	26	66.1	1.33
Altoona *† [2]	89	46	66.0	2.75
Atchison †	90	36	64.7	1.68
Beloit †	94	32	63.4	2.04
Burlington †	89	32	65.0	2.59
Colby †	96	28	63.1	1.14
Coldwater †	95	35	66.9	1.75
Collyer *[2]	98	49	64.5	T.
Columbus †	92	30	65.5	4.28
Coolidge †	97	31	63.4	3.05
Cunningham †	95	31	66.0	1.43
Downs				0.92
Eldorado †	85	40	68.4	1.10
Elk City *[1]	88	45	67.2	2.51
Ellis *[2]	92	40	69.2	.....
Emporia †	89	40	66.5	4.10
Englewood †	93	30	65.6	2.50
Eureka Ranch †	95	29	65.4	5.16
Fort Riley †	83	37	62.2	4.41
Garden City †	94	32	65.7	0.64
Garfield				1.63
Gibson *[1]	95	26	60.8	1.17
Gove *† [1]	96	33	64.9	1.38
Grenola *[1]	96	36	67.7	1.20
Grinnell *[3]	100	40	63.9	0.75
Halstead *	86	34	63.2	2.75
Hays City †	92	20	64.4	1.65
Horton †	91	36	64.6	1.64
Hutchinson †	91	36	66.2	1.97
Independence †	91	38	67.7	3.71
Ionia †	91	35	63.4	1.37
Jaqua †	95	34	63.2	0.33
Johnson †	96	35	66.4	2.43
Kiowa †	97	36	66.8	2.22
Lakin †	95	30	65.6	2.04
Lawrence	90	44	66.6	2.00
Lebo †	92	33	65.2	2.23
Leoti †	95	30	64.0	1.81
Liberal †	96	34	68.4	2.63
Macksville †	95	31	66.3	2.42
McPherson †	90	30	64.3	3.48
Manhattan *b*	92	30	64.9	3.78
Manhattan *c* *[1]	92	30	62.0	3.60
Marion †	88	29	62.8	2.10
Marmaton				3.81
Medicine Lodge				2.21
Minneapolis †	92	32	64.8	3.36
Monument *[1]	99	43	65.6	0.30
Morland †	95	25	63.8	0.65
Morton †	97	34	67.4	3.20
Mount Hope *[1]	90	42	66.5	1.68
Ness City †	90	40	68.9	0.97
New Eng. Ranch †	95	27	64.2	0.93
Oberlin †				0.51
Olathe †	90	35	65.4	1.81
Oswego †	92	32	65.9	3.05

Stations.	Temperature. (Fahrenheit.) Max.	Min.	Mean	Precip'n.
Kansas—Cont'd.	°	°	°	*Ins.*
Phillipsburg †				0.50
Pleasant Dale †	88	27	63.2	1.45
Quinter *[2]	102	49	68.8	.....
Rome *† [1]	93	36	65.7	2.13
Salina †	90	32	65.2	3.02
Sedan †	93	39	67.5	2.31
Sharon Springs *[1]	98	48	66.0	2.00
Sterling †	92	38	61.1	2.83
Topeka	90	34	66.0	2.96
Tribune †	95[f]	32	65.4[f]	1.88
Ulysses †	101	34	68.8	1.99
Wa Keeney *[1]	92	46	64.5	0.50
Wakefield *[1]	92	50	66.8	4.58
Wallace *a* †				1.80
Wamego *[1]	90	34	63.0	3.84
Washington †	92	31	65.2	2.82
Wellington *[1]	94	44	71.2	0.54
Winfield *[5]	100	30	66.4	2.01
Winona *[2]	96	46	62.8	1.25
Yates Center †	88			2.32
Kentucky.				
Alpha *† [1]	93	40	68.5	3.97
Blandville	90	37	65.5	3.91
Bowling Green *a* *[1]	88	30	61.6	3.90
Bowling Green *b* †	93	39	66.7	3.47
Burnside †				4.50
Caddo †	88	34	67.1	2.90
Canton *† [1]	90	42	65.6	2.16
Carrollton *† [1]	91	38	64.4	3.47
Catlettsburg *† [5]	89	42	63.2	4.25
Cromwell *† [1]	92	41	66.5	2.55
Earlington	88	43	65.0	3.15
Eddyville *† [1]	83	42	64.9	2.21
Edmonton †	87	38	62.7	4.18
Eubank †	92	32	63.7	6.23
Falmouth †				3.03
Fords Ferry †	99	40	68.2	1.86
Franklin *† [1]	89	42	65.5	3.72
Georgetown	90	32	62.3	.....
Greendale *[1]	86	33	64.6	4.19
Greensburg *† [1]	86	39	62.0	3.14
Harrodsburg †	92	33	63.8	2.62
Henderson †	91	42	66.7	4.15
Hendricks †				3.21
Lagrange	89[k]	36[k]	65.1[k]	4.10
Louisa †	91	35	62.6	4.04
Marrowbone †	90	39	66.0	4.11
Middlesboro *[1]	88[e]	43[f]	63.7[f]	3.19
Mount Sterling †	90	32	62.5	4.27
Munfordville *† [1]	88	40	65.8	2.75
Paducah *a* †				3.95
Paducah *b* †	92	39	67.1	3.92
Pellville †	92	37	65.8	4.13
Princeton †	92	38	65.0	.....
Richmond †	98	32	65.8	3.45
Russellville †	89	40	65.9	3.15
Sandy Hook †	92	32	63.8	3.83
Shelby City *[1]	85	33	62.0	2.82
Shelbyville †	91	34	64.3	4.56
South Fork †[2]			62.7	4.32
Springfield †	92	33	60.3	4.10
Williamsburg †				4.50
Louisiana.				
Abbeville	89	49	73.4	.....
Alexandria †	92	45	73.2	3.98
Amite †	95	40	73.5	1.68
Bastrop †	88	43	72.0	2.06
Baton Rouge †	94	46	74.6	1.50
Calhoun †	91	43	72.6	3.35
Cameron † [6]			72.8	0.00
Cheneyville †	93[k]	44	74.8	3.72
Clinton †	94[d]	40[d]	73.8[d]	1.74
Coushatta *a* †				3.50
Coushatta *b* †	92	46	74.6	2.94
Covington †	93	43	73.4	1.78
Davis	91	38	70.8	2.58
Delhi †				3.00
Donaldsonville †	96	49	76.0	1.85
Emilie †	91	46	74.4	2.82
Farmerville	88	44	72.6	4.24
Franklin †	93	46	75.0	4.14
Girard †	92	40	71.6	3.39
Grand Coteau	91	49	74.8	1.92
Hamburg				2.86
Hammond †	94	42	74.2	1.83
Houma †	93	61	79.4	4.89
Jeanerette †	93	45	74.6	3.47
Lafayette †	95	45	75.6	2.61
Lake Charles †	94	44	72.2	0.74
Lake Providence †	89	44	72.4	2.36
Lawrence †	95	60	78.0	4.83
Liberty Hill	93[e]	43[e]	76.5[e]	5.07
Many	91	46	74.1	2.87
Maurepas	97	42	75.0	1.39
Melville †				3.55
Minden †	94	46	74.2	2.52
Monroe †	93	29	75.4	3.53
Natchitoches †	92	40	72.0	4.32
New Iberia	92	51	74.9	1.33
Oberlin †	96	45	74.5	.....
Opelousas †	96	43	74.6	0.75
Oxford †	88	43	71.2	4.69
Paincourtville †	91[e]	44[d]	73.8[e]	3.03
Plain Dealing	88	50	71.6	1.56
Plaquemine	91	45	72.9	1.55

Meteorological record of voluntary observers, &c.—Continued.

Stations.	Temperature. (Fahrenheit.) Max.	Min.	Mean	Precip'n.
Louisiana—Cont'd.	°	°	°	*Ins.*
Rayne †	91	48	74.6	3.15
Roseland	93	43	73.6	1.71
St. Joseph				2.63
Schriever †	94[f]	44[f]	75.0[f]	2.09
Shell Beach	93	57	77.4	1.50
Sugar Ex. Station †	91	49	74.8	3.67
Sugartown †	90	38	68.8	2.70
Thibodeaux				4.23
Wallace	90	50	74.9	2.16
West End				1.23
Winnsboro	93[k]	49[k]	75.4[k]	2.28
Maine.				
Bar Harbor	83	37	52.7	4.33
Belfast *[5]	80	44	52.3	5.86
Calais †	77	34	52.3	2.14
Cornish *[1]	83	40	54.3	7.44
Fairfield	85	30	54.2	3.78
Farmington †	91	31	55.0	5.14
Fort Kent †	80	32	53.8	1.09
Gardiner	87	35	54.3	5.84
Houlton †	83	32	54.9	3.05
Lewiston	82	36	54.0	6.55
Madison *[1]	84	44	54.8	4.75
Mayfield	85	30	52.6	4.83
North Bridgeton	82	34	54.4	6.40
Orono †	85	30	52.3	3.84
Petit Menan *[1]	65	30	49.9	.....
West Jonesport *[1]	74	35	48.3	.....
Maryland.				
Bachmans Val. *[1]	84	40	62.4	9.13
Benedict †	90	42	67.8	4.64
Boettcherville *[1]	90	36	63.5	5.40
Cherryfield *[2]			66.0	2.85
Chestertown	84	41	63.8	6.67
College Park	86[b]	38[f]	63.8[b]	3.90
Cumberland *a* †	85	38	63.2	6.13
Cumberland *b*	88	33	66.0	5.97
Darlington †	85	40	62.8	8.11
Easton †	87	47	67.5	6.46
Fallston *[1]	85	41	62.6	10.41
Fenby *[1]	81	40	62.9	6.00
Frederick	86	42	65.2	8.63
Great Falls *[5]	86	46	66.1	5.77
McDonogh [c]	84	41	64.0	.....
Mardela Springs †	89	45	65.0	4.33
Mt. St. Marys Col †	86	47	64.8	9.40
New Market *[1]	84	40	63.0	7.15
Oakland †	81	30	55.0	4.19
Pocomoke City	87	44	67.9	5.18
Solomons †	87	44	67.7	4.65
Sunnyside †	84	28	57.2	3.78
Taneytown †				6.31
Upper Marlboro †	88	40	66.2	4.48
Woodstock [1]	77*	39	63.8	5.32
Massachusetts.				
Adams	82	32	56.7	.....
Amherst	84	30	56.6	3.59
Amherst Ex. St'n *a*	84	28	56.4	3.80
Amherst Ex. St'n *b*	85	29	57.3	4.00
Andover	87	34	56.9	5.32
Ashland				4.10
Bedford	89	32	56.8	4.04
Beverly Farms	87	35	53.9	5.09
Blue Hill (sum't)	87	37	56.4	3.13
Blue Hill (valley)	87	37	56.2	3.14
Boston				3.74
Brockton *a*	91	37	57.8	3.32
Brockton *b*				3.82
Cambridge *a*	89	37	58.4	2.27
Chestnut Hill	89	34	59.2	4.27
Clinton				3.40
Concord †	87	30	56.4	4.22
Dudley	86	36	57.6	3.52
East Templeton *[1]	82	40	55.8	1.37
Egg Rock, Nahant	83	38	53.8	.....
Fall River *[1]	85	40	56.4	4.32
Fiskdale				3.75
Fitchburg *a* [1]	82	41	56.2	4.00
Fitchburg *b*	84	32	56.5	3.56
Framingham	88	30*	57.6*	4.37
Gilbertville	86	29	56.7	3.22
Groton *a*	84	30	55.4	3.76
Hingham				3.87
Hyannis	86	40	58.5	3.74
Kendall Green	80	39	57.4	3.22
Lake Cochituate	90	28	57.4	3.70
Lawrence	85	34	58.6	4.00
Leeds	84	32	58.1	6.62
Leicester	80	36	55.1	4.15
Leominster *[4]	84	37	55.9	3.82
Long Plain *[4]	85	34	54.3	5.02
Lowell *a*	84	33	57.4	4.36
Lowell *c*	87	30	56.5	.....
Ludlow Center	83	25	54.8	3.29
Lynn *b*	89	38	57.6	.....
Mansfield [1]	86	30	56.0	5.04
Middleboro	88	30	56.1	4.48
Milton *[1]	85	33	55.4	3.39
Monroe	78	29	52.9	3.95
Mount Hermon	85	31	58.4	2.87
Mount Nonotuck				3.39
Mystic Lake				5.18
Mystic Station				4.74
New Bedford *a*	84	38	56.4	4.46
New Bedford *b*	87	35	55.8	4.60

Stations.	Temperature. (Fahrenheit.) Max.	Min.	Mean	Precip'n.
Massachusetts—Con.	°	°	°	*Ins.*
Newburyport				3.57
North Billerica	87	34	57.6	4.42
Pittsfield	77	33	55.8	3.82
Plymouth *[1]	90	44	58.2	4.35
Provincetown	86	39	55.6	3.51
Randolph				4.19
Roberts Dam				3.66
Roxbury	87	40	57.5	3.69
Royalston *[6]	80	40	56.4	.....
Salem				4.78
Salisbury				4.86
Somerset *[1]	91	38	60.9	3.97
South Dennis	82	33	54.7	3.15
Springfield Arm'ry	88	38	60.0	3.59
Taunton *b*	90	34	57.8	3.83
Taunton *c*	89	27	57.0	4.32
Taunton *d*	90	31	58.0	3.76
Turners Falls	82	32	57.6	2.06
Wakefield †	89	34	57.5	4.91
Waltham				4.57
Webster				4.05
Wellesley	87	30	59.4	4.06
Westboro †	88	30	59.3	4.46
Williamstown	78	32	57.0	3.16
Winchendon				2.76
Winchester				4.24
Winthrop	89	37	56.4	4.17
Worcester *a*	83	37	56.7	4.76
Worcester *b*	84	38	57.4	4.63
Michigan.				
Adrian	89	34	57.3	9.17
Albion	84	32	57.2	5.86
Allegan	86	30	56.8	8.14
Alma	88	31	56.2	5.31
Ann Arbor	84	34	55.0	5.93
Arbela [2]			51.2	5.14
Ball Mountain	86	30	52.9	5.00
Bear Lake	77	27	52.0	4.65
Bellaire	84	27	52.0	2.91
Benton Harbor	91	34	56.8	6.18
Berlin *[1]	84	32	53.9	7.89
Berrien Springs *a* *[1]	90	39	58.6	5.33
Berrien Springs *b*				3.47
Birmingham	90	36	57.2	6.09
Bois Blanc *[10]	78	33	47.8	.....
Boon	82	25	51.6	6.88
Bronson	86	36	58.2	5.96
Brown City	84	31	54.6	7.24
Calumet	74	29	45.0	4.49
Charlevoix	73	33	51.1	5.00
Cheboygan	74	28	48.6	5.46
Climax *[6]	87[k]	35	57.4	4.29
Clinton	88	33	56.7	7.54
Crisps *[10]	74	32	47.3	.....
Crystal Falls	80	26	49.0	3.49
Fairview	85	33	55.8	5.37
Fitchburg	86	30	56.3	7.65
Flint	85	30	55.4	4.97
Frankfort *[10]	78	38	53.6	.....
Gladwin	82	24	53.9	.....
Grande Pointe au Sable *[10]	72	34	47.7	.....
Grand Rapids	87	30	58.3	5.58
Grape	85	32	56.6	5.80
Grayling	88	27	52.0	3.45
Grindstone City *[10]	76	34	49.6	.....
Hammonds Bay *[10]	72	34	47.4	.....
Hanover	84	27	57.3	5.43
Harbor Springs	75	29	49.0	6.13
Harrison	88	30	53.1	5.56
Harrisville	76	30	48.5	8.08
Hart	78	29	53.2	6.50
Hayes	79	31	54.1	3.77
Highland Station	86	30	52.9	5.00
Holland *[10]	80	38	55.2	.....
Howell	87	32	55.7	5.93
Jeddo	82	33	52.5	7.84
Kalamazoo	86	34	56.5	8.33
Lake City *[6]	.....	32[e]	48.7[e]	4.28
Lansing	86	32	55.5	6.51
Lathrop *[1]	79	31	47.5	5.15
Lewiston	82	28	50.1	3.53
Lodi	80	28	51.8	5.51
Ludington *[10]	75	38	51.1	.....
Madison	86	33	57.0	8.89
Manistee *[10]	70	38	50.0	.....
Middle Island *[10]	70	29	45.7	.....
Mio	85[e]	31[d]	45.6[e]	.....
Mottville	88	29	57.2	5.38
Muskallonge L. *[10]	70	32	45.4	.....
N. Manitou Isl'd *[10]	68	30	48.2	.....
North Marshall	85	29	53.3	4.90
Northport	73	33	49.0	5.02
Old Mission	76	31	51.4	4.06
Olivet	84	25	52.4	4.60
Ottawa Point *[10]	69	34	50.7	.....
Ovid	85	32	54.8	6.57
Paris	81[e]	25[e]	52.7[e]	6.57
Parkville				7.28
Pentwater *[10]	80	42	55.0	.....
Pte aux Barques *[10]	77	35	52.6	.....
Point Betsey *[10]	75	38	50.7	.....
Rawsonville *[1]	90	34	57.6	5.98
Rockland	82[k]	27[k]	49.6[k]	7.53
St. Ignace	73	32	47.6	5.15

Meteorological record of voluntary observers, &c.—Continued.

Stations.	Temperature. (Fahrenheit.) Max.	Min.	Mean	Precip'n.
Michigan—Cont'd.	°	°	°	*Ins.*
St. Johns	87	32	56.2	.....
Sand Beach	80	32	50.7	4.11
Ship Canal *10	70	30	47.3	.....
Stanton	87	29	54.4	6.28
Sturgeon Point *10	72	28	50.5	.....
Thornville	87	34	57.0	6.15
Thunder Bay I'd *10	72	34	49.7	.....
Two Heart River *10	76	32	45.6	.....
Vandalia	85	35	58.0	6.50
Vermillion Pt. *10	69	30	41.7	.....
White River *10	80	30	53.3	.....
Ypsilanti	86	30	54.5	7.55
Minnesota.				
Ada †	86	30	58.0	1.92
Airlie †	94	29	59.0	1.27
Albert Lea †	87	34	58.2	2.70
Alexandria *a* †	.....	.....	.....	2.25
Alexandria *b*	88	32	56.0	.....
Beardsley †	95	26	58.2	0.79
Belle Plaine *1	93	34	63.4	.....
Bingham Lake †	92	31	60.8	1.21
Bird Island	90	33	57.8	3.99
Blooming Prairie *1	90	32	58.2	4.60
Bonniwells Mills †.	89	30	59.6	1.31
Caledonia †	88	31	58.8	2.85
Cambridge †	81	31	55.9	7.59
Camden †	92	29	59.6	1.39
Campbell	94	29	57.3	2.14
Carver † 2	.....	.....	56.5	2.60
Clear Lake †	87	31	57.6	4.10
Clearwater *1	87	40	55.3	.....
Collegeville	89	37	58.8	5.07
Cromwell *1	80	31	52.0	5.22
Crookston *a* †	80	32	55.8	.....
Dassel *1	84	42	58.7	.....
Dawson *3	91	30	56.0	.....
Excel *1	96	32	52.5	.....
Farmington †	88	32	57.6	1.83
Fergus Falls †	88	32	56.7	1.37
Fort Ripley †	.....	.....	.....	5.36
Grand Meadow †	90	30	56.0	3.57
Granite Falls	93	30	58.8	0.89
Hutchinson *1	82	40	58.8	1.70
Jadis † 1	77	36	53.7	2.71
Lake Vermillion †	76	34	51.8	2.71
L Winnibigoshish *1	75	37	52.6	2.72
Leech Lake *1	75	34	51.8	3.75
Long Prairie †	88	27	54.4	3.66
Luverne †	92	28	58.6	2.26
Maple Plain	89	34	57.4	3.24
Marfield †	79	22	47.2	3.89
Mazeppa †	88*	28	54.9	2.24
Medford †	90	30	58.2	2.83
Milan †	96	32	58.8	1.90
Minneapolis *a* †	88	36	58.4	3.17
Minneapolis *b* †	86*	31	57.7	3.51
Minnesota City †	88	34	59.2	3.14
Montevideo †	93	34	58.5	0.74
Morris	90	34	58.6	1.16
New Richland *1 †	88	40	57.6	.....
New Ulm	92	38	62.6	2.25
Ortonville †	.....	.....	.....	2.11
Park Rapids †	80	30	53.6	4.42
Perham †	84	30	54.7	.....
Pine River *1	79	40	53.6	3.79
Pokegama Falls †	76*	20	50.9	4.21
Red Lake †	77	25	50.0	3.32
Red Wing †	.....	.....	.....	2.71
Redwood Falls †	.....	.....	.....	1.66
Rolling Green †	88	34	58.4	1.45
Rush City †	86[1]	32[1]	56.0[1]	5.78[e]
St. Charles †	89	32	58.4	4.87
St. Cloud	83	36	57.0	8.54
St. Olaf	88	34	56.6	0.94
St. Peter †	90	32	58.6	3.10
Sandy Lake Dam *1	77	40	52.6	2.52
Sauk Center	88	29	55.2	2.22
Sunrise City *8	84	32	56.4	.....
Two Harbors †	79	33	48.6	4.47
Wabasha *1	88	42	59.5	5.06
Willmar †	89	34	57.0	0.63
Winona	88	39	60.2	4.21
Worthington	90	33	59.0	1.01
Mississippi.				
Aberdeen †	98	43	72.5	2.66
Agricult'ral Col'ge.	90	44	71.8	2.40
Batesville †	90	40	70.5	0.98
Bay St. Louis †	88	41	74.0	1.29
Biloxi †	90	46	74.6	1.87
Briers	92	49	74.7	1.47
Brookhaven †	95	40	73.9	4.91
Canton †	89	45	72.6	3.73
Clarksdale †	98	40	70.8	1.72
Columbus *a* †	.....	.....	.....	2.01
Columbus *b*	96	43	74.6	1.74
Corinth	91	40	69.6	3.75
Crystal Springs †	91	44	72.0	3.73
Duck Hill †	89	44	70.0	0.88
Edwards	93	45	74.2	4.86
Egypt *1	92	47	70.9	.....
Enterprise †	92*	41[f]	72.0[f]	1.80
Fayette †	89	46	73.8	1.99
French Camps †	85	34	66.6	1.54
Greenville *a*	89	50	72.6	0.57
Greenville *b* †	92	48	73.6	0.61

Stations.	Temperature. (Fahrenheit.) Max.	Min.	Mean	Precip'n.
Mississippi—Cont'd.	°	°	°	*Ins.*
Hattiesburg †	93	44	75.0	2.50
Hazlehurst	92	43	73.2	5.02
Hernando †	90	42	69.9	3.37
Holly Springs	88	41	67.2	3.55
Itta Bena *† 1	94	44	74.0	1.76
Jackson †	95	44	75.2	3.92
Kosciusko †	91	41	70.8	1.40
Lake †	89	42	72.3	2.09
Leaf *1	88	46	72.1	.....
Leakesville †	93	43	73.4	2.80
Logtown †	90	46	74.1	2.73
Louisville †	90	39	70.2	2.00
Macon †	96	42	74.2	1.70
Mayersville	90	45	73.2	2.83
Natchez †	92	45	74.2	3.48
Okolona †	93	42	72.5	2.91
Palo Alto †	89	46	71.6	1.75
Pontotoc †	95	42	70.6	2.82
Port Gibson †	91	55	75.4	3.57
Stonington *1	88	56	75.2	.....
Thornton *†	88	48	73.4	2.57
Topton *3	92	48	70.8	1.15
University	90	40	71.2	0.69
Vaiden †	99	39	73.4	1.98
Water Valley *1	100	40	70.8	0.36
Waynesboro *a* †	91	41	69.5	4.81
Waynesboro *b* †	94	41	72.7	4.32
Woodville †	96	44	75.6	1.34
Yazoo City †	94	44	75.6	2.71
Missouri.				
Appleton City †	89	38	66.0	7.56
Arlington †	.....	.....	.....	7.38
Arthur *3	.....	40	56.8	8.78
Bagnell †	.....	.....	.....	5.48
Bethany	90	33	63.8	1.39
Big Piney	.....	.....	.....	4.40
Birch Tree	87	37	64.4	6.09
Bluffton *1	94	44	66.7	4.22
Boonville †	.....	.....	.....	4.97
Brunswick	89	37	65.0	1.75
Carrollton †	88	39	64.6	3.85
Conception	81	37	58.2	2.85
Cowgill	.....	.....	.....	2.28
Darksville †	90	36	65.0	2.88
Downing	.....	.....	.....	2.66
East Lynn	.....	37[j]	59.5[j]	4.01[g]
Edge Hill *5	82	48	65.0	6.83
Eight Mile *1	83	38	62.8	4.04
Eldon *1	88	40	63.9	4.81
Elmira	91	34	63.8	1.80
Emma *3	.....	40	64.1	3.82
Fairport	.....	.....	.....	1.24
Farmersville	.....	.....	.....	1.19
Fayette	92	38	66.5	3.16
Fox Creek *1	88	35	64.7	3.88
Fulton	.....	.....	.....	4.42
Gallatin *1	91	35	63.6	2.12
Glasgow	88	36	64.0	4.50
Gordonville *† 3	.....	40	62.2	3.64
Gorin *3	.....	46	63.1	1.53
Grove Dale	93	32	62.8	4.80
Half Way	.....	.....	.....	5.65
Harrisonville †	90	38	66.4	3.98
Hastain	89	33	63.8	4.22
Hermann †	.....	.....	.....	3.59
Houston	86	31	61.9	7.12
Ironton *1	86	42	62.9	8.22
Kidder	91	33	63.8	1.26
Lamar †	87	38	65.8	6.51
Lamonte †	.....	.....	.....	3.73
Langdon †	92	33	61.8	2.51
La Plata *1	84	48	64.5	1.39
Lebanon	87	36	64.7	3.83
Liberty	93	38	67.0	1.53
Louisiana Bridge †	.....	.....	.....	5.08
McCune *1	90	35	62.9	4.97
Marceline	.....	.....	.....	1.80
Marshall †	87	36	63.6	3.92
Mexico †	91	38	64.0	5.95
Mine La Motte †	85	38	63.1	7.80
Mount Vernon	88	32	63.6	5.07
Neosho	92	32	65.6	7.21
Nevada	.....	.....	.....	3.59
New Hartford *1	90[d]	38[e]	63.5[e]	3.82
New Haven *1	94	44	67.5	2.35
New Madrid	91	40	67.4	4.88
New Palestine	.....	.....	.....	3.91
Oakfield †	91	37	65.5	4.71
Oak Ridge *4	.....	40	65.8	3.20
Olden †	89	39	65.1	6.70
Oregon *a*	90	38	64.6	2.37
Oregon *b* †	90	35	64.7	2.26
Osceola	.....	.....	.....	8.60
Oto	.....	.....	.....	5.85
Palmyra	.....	.....	.....	2.60
Panacea	88	30	64.0	7.69
Phillipsburg *† 1	85	41	64.3	4.57
Pickering *1	.....	31	57.9	1.98
Platte River *1	92	38	62.1	1.90
Poplar Bluff	87	40	66.0	8.33
Potosi	88	31	61.0	5.82
Princeton *1	93	34	62.8	1.08
Rea *1	95	30	60.8	0.47
Round Spring	.....	.....	.....	6.05
St. Charles	87	36	63.6	2.37

Meteorological record of voluntary observers, &c.—Continued.

Stations.	Temperature. (Fahrenheit.) Max.	Min.	Mean	Precip'n.
Missouri—Cont'd.	°	°	°	*Ins.*
St. Joseph †	.....	.....	.....	1.59
St. Louis	88	37	63.5	3.18
Sarcoxie *3	.....	44	67.0	6.51
Sedalia	90	37	66.0	3.94
Shelbina	.....	.....	.....	2.90
Sikeston	92	39	62.5	3.09
Steffenville	.....	.....	.....	2.24
Stellada †	87	36	63.6	3.34
Sublett	89	33	60.7	2.12
Vermont *† 1	88	39	62.8	5.09
Vilas	.....	.....	.....	1.22
Virgil City	.....	.....	.....	5.10
Warrensburg *1	87	44	64.8	3.11
Warrenton	91	38	64.4	3.30
Wheatland	.....	.....	.....	8.07
Whiteside	89	36	63.6	4.08
Montana.				
Anaconda †	.....	.....	.....	0.98
Basin	.....	.....	.....	1.44
Big Timber †	89	24	56.0	3.73
Billings †	86	30	60.2	1.95
Boulder †	79	21	52.2	1.06
Bozeman †	81	29	53.2	2.54
Butte †	77	22	49.6	1.00
Cascade †	.....	.....	.....	3.84
Cokedale *2	81	.....	53.4	3.16
Fort Custer †	85	29	58.0	1.98
Fort Keogh	94	22	58.3	2.28
Fort Logan †	77	18	48.2	2.04
Fort Missoula	85	22	52.2	1.43
Glendive †	100	32	61.2	2.97
Great Falls †	86	22	54.0	2.76
Hogan	90	22	54.4	1.35
Martinsdale †	88	19	53.8	1.64
Marysville †	85	24	52.9	1.42
Livingsville †	92	29	57.8	1.67
Musselshell †	92	23	56.9	.....
Pony †	81[f]	26[f]	52.0[f]	1.18
Radersburg †	.....	.....	.....	2.10
Red Lodge †	79	23	50.6	0.46
Silver Bow	.....	.....	.....	1.01
Utica	87	21	52.0	1.68
Virginia City †	81	24	53.1	1.01
White Sul. Spgs. †	82	21	51.3	1.47
Nebraska.				
Agee *1	98	38	61.4	0.68
Ansley †	95	23	63.0	0.92
Arborville *1	100	22	61.8	0.73
Ashland †	92	31	65.8	0.92
Ashton *1	96	24	60.7	1.63
Bassett	96	30	61.1	0.85
Beatrice †	90	29	63.6	1.43
Beaver City	99	25	65.0	0.10
Bratton *1	90	40	65.1	2.24
Burwell *1	94	42	68.2	0.13
Callaway †	97	22	61.6	0.18
Columbus † *	90	29	59.7	0.64
Cornlea	.....	.....	.....	2.23
Creighton *† 1	95	31	61.2	3.65
Crete	91	30	62.8	0.75
Culbertson	.....	.....	.....	0.00
Curtis *† 1	98	29	67.6	T.
David City *† 3	91	39	61.5	1.20
Ericson *† 1	100	36	64.9	0.85
Ewing †	.....	.....	.....	1.14
Fairbury	.....	.....	.....	1.36
Fort Robinson	90	29	59.2	0.79
Fort Sidney †	94	32	58.7	0.00
Franklin †	97	24	66.0	0.68
Geneva †	94	28	64.7	2.32
Genoa †	95	28	63.1	1.86
Gering †	90	32	60.6	0.16
Glenwood *3	96	30	55.9	1.03
Haigler *1	100	40	66.0	T.
Hartington †	95	25	61.0	2.43
Harvard *1	97	29	64.4	1.46
Hay Springs	93	27	57.7	1.20
Hebron †	93	28	64.5	1.59
Imperial *1	105	28	64.9	0.20
Indianola *5	97	35	68.8	T.
Kennedy *† 1	95	40	61.9	0.25
Kimball †	93	30	59.6	0.98
Lexington †	98	22	64.6	0.70
Lincoln	91	35	63.6	0.74
Lynch *† 1	97	35	62.6	0.46
Madrid *† 5	96	31	63.6	0.26
Marquette *	96	43	.....	1.71
Minden †	94	30	63.3	1.77
Mullen *† 1	88	46	67.4	0.04
Nebraska City *† 1	85	31	62.0	1.97
Norfolk †	91	32	62.1	1.30
North Loup *† 1	95	24	63.5	0.69
Oakdale †	96	27	61.8	1.13
Ogallala †	98	.....	.....	0.55
O'Neill *1	96	42	62.9	0.77
Ough	.....	.....	.....	0.22
Plattsmouth †	.....	.....	.....	1.17
Ravenna	95	26	62.9	0.99
Red Cloud	.....	.....	.....	1.61
Santee Agency †	99	30	63.0	1.72
Seward *5	94	35	60.6	1.93
Springview	98	32	61.8	0.45
Stanton *1	93	35	61.0	1.95
State Farm	99	28	64.8	.....
Superior *5	90	43	68.8	2.03

Stations.	Temperature. (Fahrenheit.) Max.	Min.	Mean	Precip'n.
Nebraska—Cont'd.	°	°	°	*Ins.*
Sutton	95	28	63.8	1.57
Table Rock *† 1	93	34	65.0	2.04
Tecumseh †	90	28	62.9	2.41
Turlington †	93	39	64.6	1.88
Wallace *1	98	40	62.7	T.
Weeping Water *1	93	30	59.9	1.37
Whitman *1	92	38	58.5	0.00
Wilcox	.....	.....	.....	0.72
York *1	95	34	61.6	1.33
Nevada.				
Austin	86	20	52.7	0.85
Battle Mountain *1	95	40	63.3	1.25
Belleville *3	90	32	61.3	0.09
Belmont	75	23	52.3	0.54
Beowawe *3	86	32	59.7	0.55
Candelaria	86	26	58.9	0.75
Carlin *3	82	31	54.9	1.75
Carson City	82	20	54.1	1.07
Cranes Ranch	.....	.....	.....	0.93
Elko *3	85	5	56.2	1.15
Ely	80	18	53.4	0.80
Fenelon *3	86	30	54.3	0.00
Genoa	79	29	48.3	0.42
Golconda *1	90	42	62.1	0.91
Gold Hill	83	23	55.3	0.89
Halleck *1	92	30	56.0	0.47
Hawthorne *a* *3	83	39	61.4	0.16
Hawthorne *b*	87	29	59.4	0.14
Hot Springs *1	85	47	63.8	0.50
Humboldt *3	87	30	54.1	0.00
Lewers Ranch	81	22	54.4	1.86
Lovelock *3	98	42	66.6	0.00
McGill	84	19	53.2	0.47
Mill City *1	92	38	61.2	.....
Osceola	80	22	56.2	1.67
Palisade *1	80	30	56.4	1.45
Palmetto	80	22	53.6	1.42
Paradise	91	22	56.8	0.53
Reno *3	90	35	57.0	0.50
Reno State Univ'ty.	82	.....	.....	0.91
Saint Clair	88	28	57.2	0.00
Stofiel	83	16	46.6	0.87
Sunnyside	89	30	63.4	0.55
Tecoma *3	84	32	58.4	0.35
Toano *1	78	26	53.4	0.00
Tybo	81	22	55.6	0.10
Verdi *3	85	28	54.7	1.30
Virginia City	77	25	51.8	1.62
Wadsworth *3	87	30	53.7	0.52
Wells *3	88	30	56.7	0.30
Winnemucca *3	82	32	57.1	1.94
Yerington	85	28	59.0	0.61
New Hampshire.				
Alstead *4	81	34	54.8	2.40
Antrim	.....	.....	.....	4.56
Belmont	.....	.....	.....	3.85
Berlin	81	28	52.8	.....
Berlin Mills	81	28	53.5	3.71
Bethlehem	78	28	55.1	2.37
Brookline *1	88	38	57.2	4.18
Concord	84	33	55.2	4.79
Dublin	79	33	53.6	4.41
East Canterbury	82	36	53.8	5.09
Grafton *1	83	28	54.6	3.40
Hanover	79	33	55.1	3.38
Keene	85	26	55.3	3.48
Lakeport	.....	.....	.....	3.96
Lancaster	81	32	56.7	2.62
Littleton	81	25	55.0	2.44
Mine Falls	.....	.....	.....	4.25
Nashua	88	32	57.5	3.58
Newton	88	29	54.6	4.10
North Conway	85	28	54.2	3.95
Pennichuck St'n	.....	.....	.....	3.52
Peterboro	83	25	54.5	3.77
Plymouth	86	28	53.2	4.36
Sanbornton †	81	30	53.8	4.58
Stratford	88	29	57.6	3.00
Wiers Bridge	.....	.....	.....	4.54
West Milan	82	27	53.6	3.37
Wolfboro	.....	.....	.....	4.53
New Jersey.				
Allaire	89	36	61.0	.....
Asbury Park	87	43	59.8	5.50
Barnegat	90	42	60.0	6.65
Bayonne	88	42	61.1	3.78
Beach Haven	86	45	60.2	5.96
Belvidere	88	37	61.7	6.65
Beverly †	89	40	63.1	10.47
Billingsport *1	84	48	63.5	10.07
Blairstown	88	36	60.9	.....
Boonton	88	40	60.5	4.49
Bridgeton	88	45	65.8	15.61
Camden	88	42	62.8	12.38
Cape May	85	46	62.2	7.78
Cape May C. H †	87	40	61.4	7.04
Charlottsburg	79[1]	30[1]	56.2[1]	6.03
Chester	84	31	58.5	.....
Deckertown	84[1]	35[1]	59.8[1]	5.83
Dover	88	35	59.4	5.61
Egg Harbor City	88	42	61.8	10.78
Elizabeth †	90	40	61.2	4.04
Franklin Furnace	84	32	58.8	5.72
Franklinville	86	36	62.0	12.63
Freehold	87	41	61.3	7.02

Meteorological record of voluntary observers, &c.—Continued.

Stations.	Temperature. (Fahrenheit.) Max.	Min.	Mean	Precip'n.
New Jersey—Cont'd.	°	°	°	*Ins.*
Friesburg	.....	.....	.....	12.14
Gillette	87	35	58.6	5.93
Hammonton	.....	.....	.....	13.58
Hanover	84	39	60.2	4.56
Highland Park †	87	41	61.2	6.23
Hightstown	87	42	62.5	8.55
Imlaystown	89	43	63.0	8.12
Junction	.....	.....	.....	8.05
Lambertville	86	41	62.0	10.91
Millville	91	43	64.8	12.16
Moorestown	88	41	62.4	12.88
Newark *a*	83	42	60.2	3.57
Newark *b* †	88	43	61.0	4.15
New Brunswick *a*	88	40	61.6	6.57
New Brunswick *b*	86	42	59.8	6.56
Newton	87	36	60.4	5.09
Ocean City	88	43	61.0	9.24
Oceanic	86	46	63.3	5.67
Papakating	.....	.....	.....	5.30
Paterson	93	42	63.0	3.76
Pensauken	.....	.....	.....	11.11
Perth Amboy	89	43	62.0	4.26
Plainfield	90	40	61.0	5.63
Rancocas	.....	.....	.....	10.66
Readington [*6]	86	46	64.5	.....
Ringoes	.....	.....	.....	10.54
River Vale	91	31	59.9	4.08
Salem	89	42	63.4	13.46
Somerville	93	40	62.0	8.66
South Orange	86	42	60.5	4.20
Tenafly	82	34	59.0	4.01
Toms River	89	38	61.1	8.60
Trenton	86	48	65.0	10.75
Vineland	90	42	64.5	13.39
Whiting	92	40	63.0	9.00
Woodbine	88	41	62.0	8.89
New Mexico.				
Albert †	94	40	67.8	3.41
Albuquerque †	90	37	65.5	0.80
Alma †	92	33	64.8	0.32
Bloomfield	94	27	60.4	0.15
Chama †	85	21	54.2	0.55
Deming [*6]	91	61	78.7	0.00
East Las Vegas †	83	32	58.7	2.53
Eddy [*1]	97	55	76.4	0.13
Estalina Springs	86	32	59.2[1]	0.16
Fort Bayard	88	36	62.4	0.00
Fort Stanton †	85	32	61.1	1.02
Fort Wingate	87	29	60.6	0.02
Galisteo †	83	35	62.9	0.81
Gallinas Spring †	94	36	65.8	1.81
Halls Peak †	79	19	50.8	2.63
La Luz †	96	36	70.1	0.02
Las Cruces †	95	34	66.9	T.
Lordsburg [*6]	100	48	70.5	0.00
Los Lunas †	94	37	68.3	0.95
Monero †	87	22	54.0	0.08
Olio †	94	32	64.0	0.45
Raton †	88	30	59.5	3.05
Rincon †	102	36	71.7	0.10
San Marcial †	91	38	67.5	0.16
Socorro †	94	38	70.7	0.20
Springer †	90	34	67.4	0.76
Sulphur Hot Sp'gs †	77	23	49.7	1.98
Taos †	92	29	59.5	1.39
New York.				
Addison	85	33	57.4	9.70
Akron	.....	.....	.....	6.82
Alfred Center	83	30	54.2	7.91
Angelica †	83	31	54.4	8.82
Arcade	79	32	54.1	10.05
Arkwright	77	37	54.0	.....
Atlanta	.....	.....	.....	8.44
Baldwinsville	84	36	57.3	5.96
Bedford	86	36	59.1	5.36
Big Sandy [*10]	82	38	58.0	.....
Binghamton †	84	28	57.8	5.34
Bovina Center	.....	.....	.....	7.79
Brentwood	89	38	59.2[d]	4.75
Brookfield	81	27	53.5	6.50
Canton †	82	26	56.0	4.11
Charlotte [*10]	80	36	51.7	.....
Chenango Forks	.....	.....	.....	4.88
Cooperstown †	78	30	54.7	5.29
Cortland	79	34	55.8	6.31
De Kalb Junction	.....	.....	.....	4.24
Demster	.....	.....	.....	7.64
Eden Center	85	31	57.8	12.02
Ellis	.....	.....	.....	8.60
Elmira †	88	34	60.0	7.65
Factoryville †	88	27	57.8	6.96
Fleming [1]	83	33[a]	56.6	5.07
Fort Niagara †	80	35	55.0	7.31
Friendship	83	30	54.8	9.19
Glens Falls	85	31	59.1	3.92
Gloversville	82	32	56.4	7.48
Hamilton	.....	.....	.....	5.09
Hess Road St'n †	83	31	54.1	5.83
Honeymead Brook	84	33	58.0	5.85
Humphrey †	83	32	55.5	9.50
Hyndsville	85	30	57.5	6.45
Ithaca	83	30	56.2	7.34
Jamestown [*6]	82	42	58.2	.....
Kings Station	.....	.....	.....	5.26
Lebanon Springs	80	27	55.9	5.22
Le Roy	81	34	55.8	6.94
Lockport	79	36	55.5	7.98
Lowville	80	28	54.4	4.35
Madison Barracks †	77	34	55.7	4.96
Malone	78	33	55.4	2.85
Middletown	83	39	59.2	5.33
Minnewaska	80	37	56.5	5.85
Mount Morris	85	30	55.1	6.27
Newark Valley	.....	.....	.....	6.50
New Lisbon	82	23	54.1	4.82
North Hammond †	80	32	56.1	4.07
Number Four †	76	26	53.0	4.40
Ogdensburg	76	37	56.6	3.18
Oxford	83	26	57.7	5.03
Palermo †	85	26	55.6	6.04
Perry City	84	27	55.1	6.55
Pine City	.....	.....	.....	8.00
Plattsburg B'ks	82	35	55.6	4.14
Port Jervis	87	37	60.0	6.68
Potsdam	80	32	55.6	3.49
Poughkeepsie	87	31	58.9	5.12
Rome	90	24	57.2	5.01
Romulus	85	33	57.4	6.01
Rondout †	81	36	57.2	4.01
Saranac Lake	84	27	55.3	4.41
Scottsville	.....	.....	.....	6.50
Setauket †	83	40	58.7	4.40
Sherwood	.....	.....	.....	8.13
South Canisteo	85	30	56.1	11.46
South Kortright †	81	23	55.6	6.67
Stillwater	84	30	60.4	5.08
Strumansburg	.....	.....	.....	0.76
Turin	77	33	53.0	5.79
Varysburg	86	28	55.5	8.32
Wappingers Falls	87	36	61.0	5.84
Warwick	.....	.....	.....	5.40
Watkins	88	33	57.2	7.56
Wedgwood	85	30	55.4	8.01
West Chazy	.....	.....	.....	4.76
West Point †	87	40	60.8	4.45
Willets Point	82	45	61.0	6.47
North Carolina.				
Asheville †	86	33	62.8	3.19
Auburn [*1]	93	47	69.9	4.58
Bailey [*1]	94	44	67.5	2.71
Bakersville †	87	32	60.8	3.96
Blowing Rock †	80	28	55.3	3.33
Bryson City †	.....	.....	.....	2.85
Chapel Hill †	93	35	69.4	4.03
Columbus	81	34	62.2	3.31
Currituck Inlet †	.....	.....	.....	4.53
Erie Mills	.....	.....	.....	4.59
Experiment'l Farm	93	49	70.4	4.61
Fair Bluff †	.....	.....	.....	4.92
Falkland [*1]	98	51	72.5	3.44
Fayetteville †	.....	.....	.....	5.31
Flat Rock	85	32	61.6	5.27
Forest Hill [*1]	90	39	63.6	.....
Goldsboro	95	48	72.6	3.32
Greenville †	.....	.....	.....	4.14
Greensboro	88	44	70.2	6.32
Henderson †	94	45	[e]69.2	5.08
Highlands	77	28	57.5	4.50
Horse Cove †	85	32	62.7	4.56
Lenoir [*†1]	85	43	64.4	3.53
Littleton †	95	43	68.5	4.02
Louisburg †	87	50	69.1	3.83
Lumberton †	94	44	71.8	3.80
Lynn [*†2]	90	.....	65.0	4.34
Marion	88	35	64.3	2.12
Mocksville †	88	41	66.7	2.79
Moncure †	.....	.....	.....	5.32
Morganton [*†1]	88	38	64.7	3.10
Mount Airy †	91	39	64.9	2.22
Mount Pleasant	92	43	68.0	3.68
Murphy †	.....	.....	.....	2.49
Newbern †	94	50	70.6	5.08
Oak Ridge †	90	42	68.4	3.92
Pittsboro	89	43	66.3	5.42
Raleigh [*†1]	92	48	70.8	6.50
Rockingham †	.....	44	.....	4.26
Roxboro †	94	43	69.0	5.20
Rutherford Col [*1]	90	44	69.4	3.92
Salisbury *a*	86	50	70.7	3.21
Saxon †	93	36	66.9	3.10
Selma	94	46	70.2	5.34
Shelby †	89	43	67.2	2.16
Sloan	93	45	70.4	3.49
Soapstone M't †	92	39	67.0	2.56
Southern Pines †	92	45	71.2	2.94
Tarboro	97	44	71.3	3.70
Washington †	95	45	71.8	5.92
Waynesville †	84	33	61.2	3.58
Weldon †	95	45	69.4	4.13
Willeyton	94	43	68.8	2.79
North Dakota.				
Ashley	92	26	54.5	0.76
Berlin †	95	23	53.8	0.71
Bottineau	80	29	52.7	0.63
Churchs Ferry	89	28	54.4	1.75
Devils Lake	83	30	52.9	1.81
Dickinson †	86	31	55.3	0.90
Fargo †	94	27	55.2	2.62
Forman †	96	26	56.2	0.87
Fort Berthold	84	30	58.1	3.00
Fort Stevenson †	84	31	55.0	1.70
Fort Yates †	87	25	57.0	0.80
Gallatin †	91	27	53.6	1.42
Grafton †	83	29	52.1	1.25
Jamestown †	86	34	55.0	0.87
Kelso	91	25	55.0	1.73
Lakota †	79	29	52.7	1.31
Larimore	80[f]	28[f]	53.3[1]	1.37
Lemert †	94	26[e]	58.4[e]	2.95
McKinney	86	28	53.9	1.46
Milton †	83[d]	26[e]	52.9[b]	2.10
Minto †	88	27	53.8	0.96
Napoleon †	85	31	55.3	1.23
New England City †	88	28	55.5	1.74
New Salem	91	30	55.2	1.75
Oakdale †	81[e]	31[e]	55.2[e]	2.84
Portal †	98	29	55.3	1.55
Power †	96	30	57.6	1.96
St. Johns †	79	30	51.5	1.17
Sheyenne	92	28	54.9	2.00
Steele †	88	27	54.3	1.10
University †	78	29	53.0	0.87
Valley City †	92	27	55.7	1.82
Wahpeton †	96	31	57.9	0.97
Wild Rice † [2]	.....	.....	56.7	1.82
Williamsport	89	27	55.5	0.59
Willow City †	85	27	53.2	0.24
Woodbridge †	80	24	50.8	0.72
Ohio.				
Akron	83	38	58.6	4.52
Annapolis	.....	.....	.....	4.51
Arcanum	.....	.....	.....	4.14
Ashland	81	40	60.8	4.90
Athens	91	37	62.8	3.71
Atwater	.....	.....	.....	4.33
Auburn	85	32	57.4	4.28
Bangorville	86	35	58.1	4.30
Batavia	.....	.....	.....	3.54
Bellefontaine	94	34	59.9	4.92
Bement	86	36	56.5	4.67
Benton Ridge	92	31	60.6	4.78
Bethany	87	35	60.1	3.85
Big Prairie	88	36	58.5	5.10
Binola	88	40	62.6	4.26
Bissells	86	34	58.7	4.02
Bladensburg	85	36	58.3	3.00
Bloomingburg	89	35	60.5	4.50
Bloomington	.....	.....	.....	3.89
Bowling Green	86	33	58.3	3.42
Bucyrus	84	36	59.6	9.25
Caledonia †	.....	.....	.....	4.11
Cambridge	88	33	58.5	3.50
Camp Dennison	87	38	62.9	3.86
Canal Dover	90	32	59.7	3.36
Canton †	84	36	59.5	6.09
Cardington	86	34	58.5	3.94
Carrollton	88	34	59.3	5.15
Cedarville [*1]	84	40	62.6	3.72
Celina	86	34	60.5	2.93
Cherry Fork	92	32	62.7	2.24
Circleville †	.....	.....	.....	3.47
Clarksville	85	36	60.9	3.50
Cleveland	84	39	58.6	6.07
Clifton	87	35	60.0	6.10
Coalton	90	33	61.8	5.19
Colebrook	.....	31	.....	2.92
Cynthiana	88	38	63.1	3.00
Dayton *a*	89	37	62.5	4.17
Dayton *b* †	.....	.....	.....	3.90
Defiance	87	34	58.5	6.84
Demos	86	39	60.6	4.41
Dupont	87	34	58.9	3.77
Ellsworth	88	36	58.5	3.76
Elyria	87	38	59.0	4.46
Fairport Harbor [*10]	82	42	57.4	.....
Findlay	86	31	58.3	4.85
Fostoria	87	34	58.5	4.46
Frankfort	87	37	61.9	3.12
Garrettsville	84	33	57.0	3.05
Georgetown	92[g]	34[f]	63.4[h]	.....
Granville	88	34	59.0	3.36
Gratiot	89	35	60.2	3.21
Greenfield	89	34	60.8	3.40
Green Hill	88	32	58.2	4.87
Greenville	84	35	58.8	4.13
Guysville	88	34	61.1	2.80
Hackney	86	34	60.2	2.98
Hanging Rock	90	39	63.8	3.51
Harbor	85	36	58.2	4.18
Hedges	92	34	57.9	.....
Hillhouse	84	33	57.0	5.18
Hillsboro	91	34	62.0	2.29
Hiram	82	36	58.0	3.32
Jacksonboro	88	32	60.3	2.70
Kenton †	90	34	60.2	3.08
Kilbourne	85	35	58.1	4.66
Killbuck	88	35	59.8	4.78
Leipsic	85	35	58.2	4.18
Levering	90	32	58.0	5.36
Logan	93	37	63.1	3.73
Lordstown	83	34	58.3	2.73
Lowell	91	33	58.8	2.06
McArthur	89	35	62.2	3.79
McConnelsville	88	35	60.6	2.52
Manchester	81	33	60.7	1.36
Mansfield †	.....	.....	.....	5.23
Marietta *a* †	.....	.....	.....	3.09
Marietta *b*	87	42	64.1	3.25
Marion	88	35	59.9	5.72
Milfordton	86	34	57.1	4.62
Milligan	92	33	61.1	3.49
Millport	.....	.....	.....	5.04
Montpelier	87	33	56.8	5.11
Napoleon	89	35	59.5	4.62
Nelsonville	90	37	64.7	2.41
New Alexandria	84	36	60.5	5.58
New Berlin	84	33	58.5	4.49
New Bremen	86	34	59.2	3.01
New Comerstown	91	33	57.8	3.50
New Holland	88	34	60.1	3.77
New Paris	87	34	59.3	3.32
North Fairfield	.....	.....	.....	3.95
North Lewisburg	90	33	60.9	4.65
North Royalton	86	34	58.1	4.23
Northwood	89	34	59.8	3.57
Norwalk	89	34	59.7	4.37
Oberlin	87	37	59.4	4.12
O. S. University	88	37	58.9	2.27
Orangeville	83	32	59.6	2.05
Pataskala	88	34	59.8	3.24
Peoli	87	35	60.3	3.19
Piedmont	.....	.....	.....	1.23
Plattsburg	86	34	59.8	3.52
Pt. Marblehead [*10]	82	48	61.2	.....
Pomeroy	92	38	63.1	3.22
Portsmouth *a* †	.....	.....	.....	4.03
Portsmouth *b*	98	39	67.2	4.00
Ridg'v'le Corners	86	34	58.2	5.96
Ripley	88	32	63.0	2.32
Rittman	83	31	57.1	5.20
Rosewood	85	34	59.0	4.56
Rush Creek	.....	.....	.....	3.99
Sharon Center	85	38	63.8	3.87
Shenandoah	87	35	58.4	5.10
Sidney *a* †	.....	.....	.....	3.57
Sidney *b*	90	34	59.2	2.65
Springboro	.....	.....	.....	5.12
Stoutsville	.....	.....	.....	3.68
Sylvania	90	33	57.8	7.00
Thurman	91	36	64.0	4.07
Tiffin †	84	37	58.9	4.37
Upper Sandusky	86	36	60.5	2.32
Vanceburg	90	33	62.8	2.42
Van Wert	86	34	58.1	4.32
Vermillion	86	38	58.0	3.35
Vickery	83	39	58.9	5.77
Walnut	.....	.....	.....	4.67
Warren	86	33	59.0	4.36
Wauseon	87	33	57.8	4.11
Waverly	92	37	64.4	2.56
Waynesville	.....	.....	.....	4.95
Wellington	87	35	59.5	4.66
Westerville	86	38	59.4	2.71
Weymouth	86	33	58.2	5.29
Wheeler † [2]	.....	.....	56.0	4.53
Wooster *a*	83	35	57.5	4.41
Wooster *b* †	.....	.....	.....	4.41
Youngstown	86	33	59.4	3.43
Zanesville †	.....	.....	.....	3.76
Oklahoma.				
Alva †	95	42	70.0	2.60
Anadarko †	97	38	70.9	2.07
Arapaho †	95	38	68.3	2.01
Britton †	.....	.....	.....	1.19
Buffalo †	94	40	64.6	5.55
Burnett †	91	34	68.0	0.79
Clifton †	94	36	69.9	2.42
Enid †	96	34	69.2	2.95
Fort Reno †	93	40	68.0	1.30
Fort Sill	92	41	68.5	4.20
Fort Supply †	95	39	66.2	5.22
Guthrie †	94	40	71.1	3.59
Mangum †	96	44	72.4	2.94
Ponca †	95	36	66.5	5.30
Pond Creek †	94	32	67.4	2.15
Stillwater †	92	36	67.6	5.18
Winnview †	94[d]	46[d]	70.3[d]	3.37
Oregon.				
Albany *a* †	85	32	55.8	1.81
Albany *b* [**8]	90	42	60.6	1.16
Arlington †	93	30	59.4	1.14
Ashland *a* [**8]	81	36	55.5	3.07
Ashland *b*	87	26	55.6	2.84
Aurora [**8]	97	45	61.1	2.11
Aurora (near)	93	28	55.0	1.86
Bandon	66	37	52.5	1.55
Bay City	.....	.....	.....	1.91
Beulah †	89	24	54.1	0.99
Brownsville [**8]	82	40	58.2	1.65
Burns †	79	9	42.8	1.80
Canyon City †	91	21	59.3	5.32
Cascade Locks	94	32	56.9	2.31
Comstock [**8]	82	36	56.3	2.60
Cornelius	92	29	56.2	1.44
Corvallis *a*	80	30	54.6	1.90
Corvallis *b* [**8]	80	32	51.8	2.06
Corvallis (near)	83	31	56.0	1.94
Crook	84	19	48.2	4.01
Detroit	95	28	54.2	2.73
East Portland [*]	84	25	.....	1.21

Meteorological record of voluntary observers, &c.—Continued.

Stations.	Temperature. (Fahrenheit.) Max.	Min.	Mean	Precip'n.
Oregon—Cont'd.	°	°	°	*Ins.*
Eugene †	.....	.....	.....	1.61
Fife †	80	18	48.6	3.29
Forest Grove	95	28	54.1	1.54
Gardiner	77	34	52.2	1.29
Glenora	92	28	52.3	2.83
Grants Pass *a* †	89	24	57.2	2.27
Grants Pass *b* *[8]	83	38	58.9	1.33
Happy Valley †	83	17	51.5	3.25
Heppner †	85	28	54.8	2.50
Hood River	101	34	59.0	1.60
Hood River (near)	90	30	54.0	1.56
Hubbard	89	29	55.1	2.06
Jacksonville	85	29	56.7	2.34
Joseph	82	22	51.0	0.28
Junction City *[8]	86	40	59.1	0.49
Klamath Falls	85	27	56.6	2.02
Lafayette *[8]	95	40	59.1	0.89
La Grande †	86	31	56.1	4.54
Lakeview †	84	17	50.6	2.24
Langlois	72	34	54.5	1.48
Lone Rock	82	20	48.1	2.78
McMinnville *a* †	90	28	55.4	1.69
McMinnville *b* *[8]	88	36	55.4	1.49
Merlin *[8]	90	40	58.3	1.66
Monmouth *[8]	87	43	61.6	0.87
Mount Angel †	89	30	56.5	2.11
Newbridge	94	31	61.0	0.28
Newport	75	34	52.4	1.84
Oregon City	84	31	56.6	1.77
Pendleton	91	29	56.6	2.28
Portland *[8]	92	41	59.7	1.20
Riddles *[8]	82	30	50.5	2.73
Roseburg *[8]	85	37	57.9	1.42
Salem *a* *[8]	80	39	55.2	1.77
Salem *b* †	86	31	54.9	2.24
Sheridan *[8]	82	37	56.8	0.96
Silverton *[8]	89	30	55.7	2.23
Siskiyou *[8]	80	32	55.7	4.10
Sparta	78	24	51.4	2.31
Springbrook	92	32	56.0	1.32
Springfield *[8]	80	37	55.8	1.66
The Dalles †	93	32	60.0	0.47
Tillamook R'k L. H.	.....	.....	.....	2.29
Toledo	85	28	53.6	2.17
Umatilla †	.....	.....	.....	0.81
Vale	89	24	58.2	0.66
Vernonia *[3]	92	34	54.5	1.35
West Fork *[8]	90	32	57.5	2.16
Williams	86	26	55.6	2.46
Pennsylvania.				
Altoona	85	42	65.0	9.32
Aqueduct	89	38	64.0	8.00
Beaver Dam †	.....	.....	.....	3.70
Blooming Grove *[1]	82	42	59.4	.....
Bloomsburg	84	41	62.2	10.02
Brookville †	.....	.....	.....	6.35
Browers Lock	.....	.....	.....	12.11
Carlisle *a*	86[e]	41[e]	63.4[e]	8.12
Cassandra	84	41	62.6	14.57
Chambersburg †	84	35	61.8	7.94
Clarion †	.....	.....	.....	8.02
Coatesville	88	38	62.1	11.72
Confluence †	.....	.....	.....	5.86
Coopersburg	85	40	60.8	14.73
Davis Island Dam †	.....	.....	.....	4.36
Doylestown	.....	.....	.....	11.41
Drifton	83[d]	29[d]	57.6[d]	6.75
Du Bois †	.....	.....	.....	7.98
Dyberry †	83	27	55.4	6.25
East Mauch Chunk	88	38	60.7	13.66
Easton	84	39	62.2	8.70
Edinboro *[1]	76	36	56.9	.....
Elwood Junction †	.....	.....	.....	2.72
Emporium	85	34	59.4	9.45
F'ks of Neshami'y[1]	.....	.....	62.3	14.80
Frederick	.....	.....	.....	10.21
Freeport †	.....	.....	.....	4.27
Gettysburg	.....	.....	.....	6.84
Girardville	.....	.....	.....	12.69
Grampian *[3]	86	30	59.8	7.53
Greensboro †	.....	.....	.....	4.56
Greenville	82	34	58.6	3.03
Hamburg	87	39	62.0	10.31
Hollidaysburg	92	30	60.7	11.35
Honesdale	80	32	57.9	6.07
Huntingdon †	89	30	60.8	9.20
Johnstown †	89	33	62.4	7.03
Kane	82	30	55.8	8.74
Kennett Square	87	39	62.1	11.54
Kilmer *[6]	88	38	65.4	10.00
Lancaster	85	36	62.2	6.47
Lansdale	.....	.....	.....	14.27
Lebanon	86	36	61.0	9.45
Le Roy †	84	32	57.2	8.35
Lewisburg	87[e]	29	60.7[e]	9.40
Ligonier *[2]	86	30	60.3	5.33
Lock Haven †	90[1]	38[1]	64.6[1]	.....
Lock No. 4 †	.....	.....	.....	4.21
Lycippus	86	37	62.0	6.71
Mahoning †	.....	.....	.....	4.81
Oil City †	.....	.....	.....	5.04
Ottsville	.....	.....	.....	12.92
Parker †	.....	.....	.....	4.85
Philadelphia *b*	88	43	63.7	12.07
Philadelphia *c*	87	42	63.9	12.07
Pennsylvania—Con.				
Phœnixville	85	39	61.5	10.60
Point Pleasant	.....	.....	.....	13.09
Pottstown	88	40	63.8	12.26
Quakertown	84	35	60.4	15.02
Reading [2]	.....	.....	61.8	13.34
Ridgway †	.....	.....	.....	8.33
Saegerstown	85	30	57.7	4.92
Salem Corners	84	34	58.1	7.87
Saltsburg †	.....	.....	.....	4.46
Seisholtzville	.....	.....	.....	13.06
Selins Grove	86	38	61.2	10.03
Shinglehouse	84	30	56.4	8.94
Smethport	84	29	55.3	11.33
Smiths Corners	.....	.....	.....	13.09
Somerset	86	31	59.5	14.33
South Easton	82	33	58.8	7.26
State College	85	32	60.0	9.45
Stoyestown †	.....	.....	.....	8.31
Swarthmore	88	42	64.5	9.49
Uniontown	87[j]	41[j]	63.3[j]	6.82
Warren †	.....	.....	.....	9.21
Wellsboro *† [1]	84	28	54.2	10.23
West Chester	86	39	62.1	13.82
West Newton †	.....	.....	.....	4.24
Westtown	85	40	61.4	13.40
Wilkesbarre †	87	32	61.9	8.56
York †	85	36	62.2	4.40
Rhode Island.				
Bristol	79	41	56.5	3.85
Kingston	87	35	56.1	4.00
Lonsdale	.....	.....	.....	4.76
Newport	81	42	58.0	.....
Pawtucket	91	38	58.3	4.87
Providence *a*	88	42	68.5	5.04
Providence *c*	88	37	57.1	5.07
South Carolina.				
Allendale †	97	41	74.4	2.68
Anderson †	.....	.....	.....	3.76
Batesburg †	93	39	71.2	3.25
Blacksburg *	89	41	67.8	3.11
Blackville †	94	43	73.4	2.78
Blenheim *[3]	.....	49	68.2	4.11
Camden †	.....	.....	.....	1.81
Central [2]	.....	.....	66.4	3.44
Cheraw *a* †	94	42	71.0	2.73
Cheraw *b* †	.....	.....	.....	3.20
Conway †	.....	.....	.....	3.99
Cross Hill *[1]	90	45	72.0	4.08
Darlington *[1]	88	48	69.2	.....
Effingham †	.....	.....	.....	3.60
Flint Hill †	93	44	71.3	1.42
Florence †	96	46	74.0	3.25
Georgetown †	88	46	71.7	1.67
Greenville †	86	41	68.8	4.70
Greenwood †	98	38	72.7	5.10
Hardeeville	89	44	71.5	4.41
Hollands Store †	90	40	68.8	2.89
Kingstree *a*	90	44	72.0	1.63
Kingstree † *b*	.....	.....	.....	1.63
Little Mountain *[1]	91	40	70.3	4.08
Longshore †	92	40	70.2	2.70
McCormick * † [1]	91	44	69.1	2.08
Mount Carmel †	.....	.....	.....	2.75
Pinopolis *[1]	86	45	70.1	3.35
Port Royal †	90	52	74.3	5.29
Reidville *[1]	90	46	68.6	2.45
St. Georges †	94	42	73.8	4.18
St. Matthews †	94	41	73.3	1.61
St. Stephens †	.....	.....	.....	6.48
Santuck *[1]	88	46	69.0	2.54
Society Hill †	90	45	70.1	2.44
Spartanburg	96	51	73.6	3.56
Statesburg †	91	44	71.6	1.46
Tatum Station *[2]	.....	50	70.0	4.94
Trenton	90	42	73.1	1.20
Trial †	92	43	72.0	2.91
Watts *[5]	91	40	70.3	5.08
Yorkville	89	42	70.0	3.24
South Dakota.				
Alexandria †	98	28	62.4	1.31
Armour †	95[f]	29	58.2[f]	0.87
Ashcroft †	90	25	56.9	2.25
Bowdle * † [1]	87	36	59.4	0.44
Britton †	95	23	57.5	0.20
Brookings †	92	26	57.2	0.30
Castlewood †	.....	.....	.....	0.29
Clark †	92	28	57.2	1.00
Cross †	84	26	52.8	0.47
De Smet †	102	30	60.8	0.21
Farmingdale	.....	.....	.....	0.81
Faulkton †	97	30	58.4	0.12
Flandreau †	96	28	59.8	0.80
Forestburg †	96	28	60.1	0.99
Fort Meade	89	35	59.5	1.15
Fort Sully	98	37	62.4	0.25
Frankfort †	99	25	58.8	0.22
Gale †	.....	.....	.....	1.12
Gary	95	26	56.8	0.81
Greenwood	98	31	62.2	1.65
Highmore	98	32	60.0	0.33
Hitchcock	.....	.....	.....	0.50
Hotch City †	98	30	61.4	0.47
Howard †	95	27	59.2	0.76
Kimball †	99	34	60.8	0.75
Millbank †	95	31	59.2	0.50

Meteorological record of voluntary observers, &c.—Continued.

Stations.	Temperature. (Fahrenheit.) Max.	Min.	Mean	Precip'n.
S. Dakota—Cont'd.	°	°	°	*Ins.*
Mitchell †	96	29	61.6	0.81
Oelrichs †	95	29	59.9	1.00
Ordway	.....	.....	.....	0.36
Parker †	96	26	59.4	0.45
Parkston †	98	28	61.0	0.99
Piedmont	.....	.....	.....	1.23
Plankinton †	102	26	61.0	0.59
Rochford	.....	.....	.....	1.49
Rosebud †	98	31	59.6	0.27
Shiloh †	98	33	60.0	0.22
Silver City	.....	.....	.....	0.89
Sioux Falls †	93	27	60.0	0.48
Spearfish †	89	34	58.5	3.52
Tyndall †	105	34	63.7	0.49
Webster †	97	26	57.4	0.63
Wentworth †	95	26	57.7	0.41
Wessington †	.....	.....	.....	0.80
Wessington Sp'gs †	101	30	59.3	0.54
Tennessee.				
Andersonville *[1]	90	34	65.3	3.60
Arlington	92	42	67.4	3.43
Bolivar †	88	41	66.6	3.29
Brownsville	91	41	70.0	3.83
Byrdstown †	87	38	63.8	3.08
Carthage †	.....	.....	.....	4.19
Clarksville	89	41	65.9	3.80
Clinton †	.....	.....	.....	3.19
Columbia †	.....	.....	.....	3.36
Covington *a* †	87	42	67.0	5.75
Covington *b*	94	43	71.0	6.28
Dyersburg	91	40	68.2	3.73
Florence Station *[1]	87	42	65.7	5.13
Franklin †	92	38	65.6	4.76
Greeneville †	87	34	64.4	4.54
Harrogate †	85	35	63.3	5.67
Hohenwald	94	38	66.0	2.91
Jacksboro *[4]	87	35	62.2	4.62
Jackson *[1]	89	41	66.4	4.82
Johnsonville †	.....	.....	.....	3.34
Loudon †	.....	.....	.....	4.83
Lynnville *[1]	88	43	62.2	2.38
Milan	92	40	67.6	5.07
Missionary Ridge *[8]	.....	40	64.4	.....
Newport *[3]	91	39	64.9	4.51
Nunnelly *[1]	87	42	66.9	4.59
Palmetto †	.....	.....	.....	3.13
Parksville *[1]	88	41	66.3	2.79
Pikeville *[1]	89	42	66.2	2.34
Riddleton †	86	42	65.6	3.04
Rockwood †	.....	.....	.....	3.97
Rogersville *[1]	88	38	65.2	3.06[r]
Rugby *[1]	85	35	64.1	3.96
Savannah *[1]	89	48	70.9	2.11
Springdale *[1]	92	36	67.8	4.00
Trenton	88	39	66.0	3.49
Tullahoma * † [1]	84	36	63.4	0.90
Waynesboro *[1]	92	42	65.3	1.97
Wier * † [1]	89	38	65.8	2.89
Texas.				
Alice †	98	44[e]	78.6[e]	1.60
Arlington †	96	43	73.0	2.31
Arthur City †	.....	.....	.....	1.93
Aurora *[1]	100	46	73.2	3.40
Austin *a*	96	62	78.4	3.85
Austin *b* *[5]	89	54	75.8	.....
Belton †	98	48	76.8	3.05
Boerne * † [2]	92	60	72.1	6.05
Brady †	101	47	73.8	3.85
Brazoria †	90	50	75.5	0.11
Brenham †	92	52	76.9	1.30
Burnet * † [1]	92	52	75.9	3.60
Camp Eagle Pass	101	55	79.3	5.96
Childress †	96	42	70.4	0.83
Coldwater †	.....	.....	.....	5.40
Coleman * [3]	.....	51	71.0	5.12
College Station	89	50	74.2	1.66
Columbia †	92	50	76.4	0.15
Corsicana *a*	98	45	75.4	2.78
Corsicana *b* †	96	46	73.6	1.55
Cuero †	95	53	78.6	1.31
Dallas †	94	44	73.6	2.81
Devine	94	50	75.5	2.75
Duval *[1]	96	60	77.3	5.30
Eastland * † [1]	104	54	75.3	9.70
Estelle †	97	44	73.8	1.85
Forestburg †	98	46	71.0	6.21
Fort Brown †	94	64	79.4	2.20
Fort Clark	101	60	78.9	6.49
Fort Hancock	101	30	68.4	0.00
Fort McIntosh	100	59	80.3	5.25
Fort Ringgold †	101	53	81.8	6.90
Fredericksburg † [1]	89*	51	73.0	3.37
Gainesville †	95	45	71.5	4.29
Golindo	.....	.....	.....	2.00
Graham †	103	43	73.4	11.67
Grape Vine †	96	44	72.4	2.48
Hale Center †	97	47	69.9	2.90
Hallettsville †	96	48	77.3	1.20
Hartley †	88	35	60.0	4.85
Haskell †	101	56	71.2	7.46
Hearne	92	47	76.0	2.65
Hewitt	.....	.....	.....	7.45
Highland	104	50[e]	74.4[e]	8.85
Houston †	95	48	75.2	2.31
Huntsville †	92	50	75.8	1.60

Stations.	Temperature. (Fahrenheit.) Max.	Min.	Mean	Precip'n.
Texas—Cont'd.	°	°	°	*Ins.*
Kent	.....	.....	.....	1.35
Kyle * † [6]	.....	53	77.6	4.94
Llano * † [3]	98	59	75.5	2.20
Longview †	96	46	76.0	1.24
Luling †	97	50	78.2	1.54
McGregor †	78	43	59.9	3.84
Marshall †	90	48	70.8	2.60
Menardville * † [1]	102	56	72.8	2.97
Midland †	106	41	73.0	2.25
Mountain Spring †	96	44	72.1	3.28
New Braunfels †	91	50	75.2	3.59
Ochiltree †	.....	.....	.....	2.30
Orange †	92	46	75.4	0.22
Panter * † [8]	105[e]	55[e]	71.1[e]	4.43
Paris †	92	44	72.0	1.63
Roby †	103	39	70.8	2.71
Rockport *[1]	94	66	79.0	.....
Rock Springs †	.....	.....	.....	5.19
Round Rock	95	56	78.8	3.55
San Marcos †	.....	.....	.....	3.59
Sherman	90	46	73.4	3.51
Sierra Blanca	92	48	72.4	0.00
Sugar Land †	92	52	76.8	1.38
Sulphur Springs †	96	40	73.8	4.37
Temple †	93	51	74.8	5.00
Tyler	94	47	74.4	1.27
Victoria * † [1]	90[d]	65[d]	79.1[d]	1.03
Waco †	92	50	75.7	3.66
Weatherford †	100	46	72.9	4.55
Wichita Falls †	105	48	74.0	5.01
Utah.				
Blue Creek *[8]	90	37	65.8	0.50
Castle Gate †	86	31	58.2	0.24
Cisco †	95	32	66.2	0.16
Coalville †	90	15	53.6	0.99
Corinne *[8]	97	45	70.7	0.42
Deseret †	86	25	60.6	0.43
Fillmore †	93	22	59.4	0.64
Fort Du Chesne †	85	25	60.7	0.20
Glendale	79	38	57.2	0.10
Grouse Creek * † [1]	82	30	53.3	0.53
Heber †	84	20	54.7	0.54
Kelton *[8]	92	31	61.7	0.20
Koosharem	79	22	51.8	0.30
Lake Station *[1]	84	36	59.7	0.50
Levan † [2]	.....	.....	58.8	0.96
Loa †	83	21	53.4	0.25
Logan †	82	30	58.6	0.83
Losee †	88	22	58.2	0.03
Manti †	92	43	70.0	T.
Moab †	93	37	66.2	0.68
Mount Pleasant * † [1]	84	34	55.8	0.34
Ogden *a* *[8]	86	34	63.9	0.91
Ogden *b* † [1]	84	46	64.7	1.04
Parowan †	86	27	57.8	0.55
Promontory *[8]	84	23	57.2	0.75
Provo City † [2]	.....	.....	64.7	0.10
Randolph †	85	17	51.6	0.09
Richfield †	92	29	59.8	0.02
St. George †	98	32	67.7	0.00
Scofield †	88	10	48.8	1.70
Silver Lake *[1]	70	10	42.4	.....
Singletree * † [1]	78	28	52.1	0.35
Snowville †	84	21	56.4	0.41
Terrace *[8]	88	38	62.0	0.50
Thistle †	88	24	56.4	.....
Vermont.				
Brattleboro	86	30	57.7	2.62
Burlington †	80	40	59.8	3.54
Cornwall	82	35	57.8	2.32
Enosburg Falls †	82	28	57.2	4.96
Hartland †	85	24	53.9	3.83
Irasburg †	80	32	55.8	5.07
Jacksonville	76	25	50.2	3.52
Norwich *[6]	80[d]	31	55.0	4.08
St. Johnsbury	79	27	56.1	3.53
Simonsville	76	27	51.1	.....
Strafford * † [1]	82	32	54.4	4.01
Vernon *[3]	82	40	56.6	2.69
Wells	78	29	56.9	2.70
Woodstock	88	26	56.6	3.71
Virginia.				
Abingdon †	.....	.....	.....	3.39
Alexandria	88	42	67.2	5.60
Ashland †	90	42	67.4	6.93
Avon †	91	37	65.8	4.32
Bedford City †	90	43	66.2	3.27
Big Stone Gap †	90	32	61.5	5.23
Birdsnest * † [1]	89	54	68.1	3.40
Blacksburg	86	32	60.4	2.81
Buchanan †	.....	.....	.....	3.17
Cape Charles † [1]	84*	40	68.0	4.09
Charlottesville	92	43	68.0	2.68
Christiansburg †	.....	.....	.....	3.73
Clarksville †	.....	.....	.....	4.48
Dale Enterprise †	86	34	63.2	5.70
Danville †	.....	.....	.....	4.38
Falls Church †	.....	.....	.....	5.34
Fredericksburg †	92	40	67.3	4.04
Grahams Forge	90	36	63.0	3.56
Hampton	90	48	69.5	4.97
Hot Springs	87	30	60.4	3.39
Houston †	95[e]	42	66.7[e]	3.83
Irwin †	92	41	67.5	3.52
Lexington †	91	35	63.4	3.85

Meteorological record of voluntary observers, &c.—Continued.

Stations.	Temperature. (Fahrenheit.) Max.	Min.	Mean	Precip'n.
Virginia—Cont'd.	°	°	°	*Ins.*
Marion †	85	35	62.0	3.70
Nottoway †	96	38	69.4	5.97
Petersburg †	96	35	68.7	5.68
Richmond *a* †	98	40	69.9	6.70
Richmond *b* †	.....	.....	.....	5.32
Riverton †	.....	.....	.....	7.14
Rocky Mount †	92	39	66.9	2.92
Salem †	89	44	66.3	2.74
Saluda †	97	45	68.9	2.45
Spottsville †	93	44	68.8	3.86
Stanardsville †	91	38	66.6	3.38
Staunton †	92	36	65.2	3.33
Stephens City †	88	36	66.2	8.11
Warrenton †	87	39	65.1	5.93
Warsaw †	93	43	68.1	4.47
Whittles Depot	95	39	68.0	2.86
Woodstock †	.....	.....	.....	4.92
Wytheville †	83	34	61.2	2.31
Washington.				
Aberdeen †	92	30	52.5	3.39
Anacortes	.....	.....	.....	4.52
Blaine †	80	29	55.4	4.64
Bridgeport †	96	28	61.5	2.11
Chehalis †	88	29	54.0	1.55
Colfax †	96	31	55.7	2.44
Davenport †	86	23	55.6	1.40
East Sound †	76	35	51.8	3.52
Ellensburg †	88	24	52.2	0.46
Ferry †	94	28	55.8	3.05
Fort Simcoe	86	.....	.....	0.96
Fort Spokane	92	28	57.8	0.50
Fort Townsend	80	32	51.0	2.57
Hunters †	85	22	51.4	2.18
Kennewick †	98[d]	30[d]	63.8[d]	0.21
Lakeside †	88	36	60.0	1.37
Lapush †	73	34	50.6	2.59
Madrone * † [1]	82	34	53.7	1.61
Moxee Valley †	96	24	60.2	0.76
Olga †	76	35	51.1	3.83
Pine Hill * [1]	89	38	57.5	1.01
Pomeroy †	86	36	59.0	1.19
Pullman †	85	30	53.6	1.82
Rosalia †	87	27	53.5	2.39
Silver Creek * [1]	92	29	52.6	2.59
Snohomish †	85	34	54.6	3.92
Stillaguamish †	82	31	53.0	4.98
Sulphur	88	30	59.0	0.68
Tacoma †	84	33	52.8	2.35
Union City * † [1]	84	33	53.0	1.87
Vashon †	82	26	47.5	1.05
Waterville †	91	25	52.9	2.15
Wenatchee Lake †	92	28	51.4	2.62
West Ferndale †	85	28	52.8	4.75
West Virginia.				
Beverly †	88	36	64.7	5.88
Bloomery †	81	31	59.0	7.01
Bluefield † *c*	90	31	59.5	5.37
Buckhannon *a* †	.....	.....	.....	4.04
Burlington †	90	32	62.9	3.35
Central Station * † [1]	90	35	64.3	4.02
Charleston †	.....	.....	.....	3.52
Cloverdale †	.....	.....	.....	2.18
Davis †	82	30	54.4	4.40
Elkhorn †	87	35	62.9	2.69
Ella †	88	38	62.2	3.68
Fairmont †	.....	.....	.....	3.45
Glenville †	86	38	61.9	5.22
Grafton †	87	33	61.9	3.98
Harpers Ferry †	.....	.....	.....	7.85
Hinton †	.....	.....	.....	2.35
Madison †	83	42	65.0	4.80
Martinsburg †	86	39	64.4	9.40
Monarch †	86	42	64.2	3.48
Morgantown *a* †	.....	.....	.....	4.26
New Martinsv'le †	90	38	63.0	3.40
Nuttallburg	100	32	62.3	4.15
Parkersburg †	90	39	62.1	3.29
Philippi †	.....	.....	.....	4.62
Pleasant Hill * [2]	84	40	59.1	5.72
Point Pleasant †	91	39	65.2	4.70
Raleigh †	89	28	57.7	2.57
Rowlesburg †	.....	.....	.....	7.40
Sandyville †	89	37	62.2	4.04
Spencer †	86	35	60.9	3.88
Tannery * [1]	86	32	61.7	.....
Weston *a* †	.....	.....	.....	5.31
Weston *b* * [1]	86	42	63.8	.....
Wheeling *a* †	.....	.....	.....	3.60
Wheeling *b* †	87	41	63.5	4.12
Wisconsin.				
Amherst	79	31	53.7	4.70
Antigo †	84	28	56.0	5.50
Ashland †	90	28	53.2	.....
Baraboo †	.....	.....	.....	4.83
Barron †	83	27	53.6	8.94
Bayfield	82	24	49.6	6.45
Beaver Dam	86	30	57.4	6.25
Belleville	88	33	56.8	4.30
Beloit	87	35	58.2	3.16
Black River Falls †	90	30	58.4	4.94
Cadiz * [2]	.....	38	54.1	2.51
Centralia	85	33	56.6	3.81
Chilton	84	32	54.4	5.63
Chippewa Falls †	.....	.....	.....	5.62
City Point	87	31	56.6	5.47
Columbus	88	24	56.6	5.77
Crandon †	83	25	49.8	4.15
Delavan †	85	32	56.6	3.86
Depere †	80	32	53.5	6.20
Eau Claire	87	31	57.2	6.62
Estella †	89	24	54.2	8.13
Florence †	81	24	48.0	4.69
Fond du Lac †	86	35	55.3	4.07
Grantsburg †	90	28	57.6	7.41
Hartford * † [4]	.....	32	51.8	4.49
Harvey †	87	30	55.7	3.59
Hayward †	83	24[g]	51.6[g]	4.59
Hillsboro	88	30	56.3	3.32
Janesville	90	33	57.6	4.08
Juneau †	89	33	56.6	5.69
Kenosha * [10]	85	38	56.9	.....
Koepenick * † [1]	86	36	54.0	3.80
Lancaster †	88	34	59.5	3.51
Lincoln † [2]	.....	.....	54.4	4.99
Madison †	84	33	57.4	3.36
Manitowoc †	81	32	49.9	4.71
Meadow Valley †	85	35	57.1	5.48
Medford *b* †	82	26	52.8	4.66
Menomonie	88	26	55.4	10.56
Neillsville †	87	28	55.6	6.74
New Holstein †	83	32	52.3	6.88
Oconomowoc †	87	33	56.0	3.67
Oconto	81	29	52.6	5.90
Osceola †	85	28	56.1	9.95
Oshkosh	84	30[e]	57.4[e]	4.01
Pepin	87	35	58.8	4.18
Portage †	.....	.....	.....	6.44
Port Washington	81	34	51.8	2.49
Prairie du Chien	92[f]	34[e]	60.6[f]	.....
Racine * [10]	80	34	51.4	.....
Reedsburg †	87	33	57.6	5.16
Royalton	82	32	55.8	6.35
Sharon †	90	32	57.2	4.53
Shawano	80	28	52.1	5.40
Sheboygan * [10]	81	30	51.6	.....
Stevens Point †	81	32	57.3	6.08
Sturgeon B. Canal * [10]	69	34	48.8	.....
Two Rivers * [10]	72	35	50.6	.....
Valley Junction †	86	33	57.6	8.38
Viroqua	86	33	57.4	2.81
Watertown †	89	30	54.5	3.36
Waukesha †	85	33	55.9	3.68
Westfield †	84	32	57.0	4.58
Weston * † [3]	80	30	55.9	6.99
Wyoming.				
Big Horn Ranch †	76	14	48.1	1.58
Camp Pilot Butte †	88	20	54.4	0.51
Fort McKinney	83	29	55.8	0.23
Fort Washakie	83	19	58.6	1.08
Fort Yellowstone †	78	21	49.8	2.26
Lander	79	26	55.3	1.75
Laramie	77	23	50.2	0.42
Lusk	90	24	58.1	0.29
Saratoga †	77	22	51.4	0.30
Sheridan	87	22	55.4	0.64
Sundance	84	25	54.0	3.18
Wheatland †	88	28	58.4	.....
Mexico.				
Cuidad P. Diaz	98	62	80.2	5.46
Leon de Aldamas	92	54	74.6	0.20
Mazatlan	85	64	76.6	0.00
Mexico	84	47	66.3	1.54
Puebla	83	54	68.5	2.41
Topolobampo * [2]	90	70	77.0	.....
West Indies.				
Grand Turk Island	.....	.....	.....	7.76
Hamilton, Ber	79	57	68.9	0.11

Reports received too late to be used in general discussion of weather for May, 1894.

Alaska.				
Coal Harbor	45	12	34.8	4.60
Colorado.				
East Dale	.....	.....	.....	0.68
Indian Territory.				
Lehigh	95	35	70.4	1.16
Maine.				
Easton	85	28	53.8	.....
Missouri.				
Marble Hill [3]	88*	37	62.3	3.65
Texas.				
San Antonio	93	51	76.4	1.67

Received too late for publication in April, 1894.

California.				
Escondido	82	37	61.2	0.00
Jackson	78	30	55.0	1.38
Oroville *b*	82	40	62.7	1.20
Winchester	96	27	60.5	0.20
Colorado.				
Greeley	77[d]	21[c]	48.4[c]	1.75
Connecticut.				
New Hartford *b*	.....	.....	.....	2.00
Massachusetts.				
Lynn *a*	73	20	45.7	3.33
Turners Falls	76	17	46.8	1.41
Nebraska.				
Fort Sidney	85	11	48.9	4.39
Ough	.....	.....	.....	0.57
Ohio.				
Elyria	85	25	48.6	2.07
Oregon.				
Joseph	67	17	40.5	0.22
Texas.				
San Antonio	98	47	73.3	2.63
Wisconsin.				
Oshkosh	76	26	47.9	2.82

EXPLANATION OF SIGNS.

*Extremes of temperature from observed readings of dry thermometer.

† Weather Bureau instruments.

A numeral following the name of a station indicates the hours of observation from which the mean temperature was obtained, thus:

[1] Mean of 7 a. m. + 2 p. m. + 9 p. m. + 9 p. m. + 4.
[2] Mean of 8 a. m. + 8 p. m. ÷ 2.
[3] Mean of 7 a. m. + 7 p. m. ÷ 2.
[4] Mean of 6 a. m. + 6 p. m. ÷ 2.
[5] Mean of 7 a. m. + 2 p. m. + 2.
[6] Mean from readings at various hours reduced to true daily mean by special tables.
[7] Mean from hourly readings of thermograph.
[8] Mean of 7 a. m. + 2 p. m. + 9 p. m. ÷ 3.
[9] Mean of sunrise and noon.
[10] Mean of sunrise, noon, sunset, and midnight.

The absence of a numeral indicates that the mean temperature has been obtained from daily readings of the maximum and minimum thermometers.

An Italic letter following the name of a station, as "Livingston *a*," "Livingston *b*," indicates that two or more observers, as the case may be, are reporting from the same station. A small Roman letter following the name of a station, or in figure columns, indicates the number of days missing from the record; for instance, "[a]" denotes 14 days missing.

No note is made of breaks in the continuity of temperature records when the same do not exceed two days. All known breaks, of whatever duration, in the precipitation record receive appropriate notice.

Correction: Florida, Orlando, April, 1894, should read Orlando † instead of Orlando † 2.

NOTE.—The following changes have been made in names of stations: Illinois, McLeansboro, changed to Lucila; North Dakota, Grand Forks, changed to University.

TABLE III—*Data from Canadian stations for the month of May*, 1894.

Station.	Pressure. Mean not reduced.	Mean reduced.	Departure from normal.	Temperature. Mean.	Departure from normal.	Precipitation. Total.	Departure from normal.	Prevailing direction of wind.
	Inches.	*Inches.*	*Inches.*	°	°	*Inches.*	*Inches.*	
St. Johns, N. F.	.....	.....	.....	.....	.....	.....	.....	.....
Sydney, N. S	29.93	29.99	+ .02	44.0	— 0.5	1.08	— 3.25	ne.
Grindstone, G. S. L.	29.91	29.94	.....	40.6	.....	0.85	.....	n.
Sandy Point, N. F.	29.90	29.92	.....	44.0	.....	0.28	.....	ne.
Halifax, N. S	29.88	30.01	+ .04	46.6	— 0.4	1.78	— 2.94	n.
Grand Manan, N. B.	29.94	29.99	.....	48.0	.....	2.31	— 1.22	ne.
Yarmouth, N. S	29.92	30.00	+ .02	47.2	+ 0.2	2.04	— 1.39	e.
Saint Andrews, N. B	29.92	29.97	.....	49.0	.....	2.35	— 0.96	se.
Charlottetown, P. E. I.	29.94	29.98	.....	45.8	.....	2.65	— 0.50	s.
Chatham, N. B	29.96	29.98	+ .03	49.2	+ 3.2	0.78	— 3.12	e.
Father Point, Que	29.92	29.95	+ .01	45.4	+ 1.9	1.99	— 0.44	e.
Quebec, Que	29.62	29.95	.00	52.4	+ 2.9	3.54	+ 0.42	ne.
Montreal, Que	29.72	29.91	— .02	55.6	+ 1.6	3.73	+ 0.65	sw.
Rockliffe, Ont.	29.39	29.90	— .04	52.8	+ 3.3	3.21	+ 0.61	nw.
Kingston, Ont.	29.60	29.92	— .04	53.4	+ 0.4	3.44	+ 0.69	sw.
Toronto, Ont	29.56	29.94	— .04	51.8	— 1.2	9.07	+ 6.42	n.
White River, Ont.	28.64	30.00	.....	43.8	+ 0.2	2.36	+ 0.85	n.
Port Stanley, Ont	29.30	29.94	— .04	53.8	.....	6.56	+ 3.72	e.
Saugeen, Ont	29.22	29.94	— .02	49.6	— 0.4	3.47	+ 0.90	e.
Parry Sound, Ont.	29.22	29.92	— .04	50.8	+ 0.3	4.23	+ 0.91	w.
Port Arthur, Ont	29.28	29.98	+ .06	45.8	— 0.7	2.73	+ 0.55	ne.
Winnipeg, Man.	29.13	29.95	+ .02	52.7	+ 2.7	0.58	— 2.24	ne.
Minnedosa, Man.	28.14	29.92	+ .03	51.7	+ 2.7	1.58	— 0.06	e.
Qu'Appelle, Assiniboia	27.69	29.93	+ .05	50.6	+ 0.6	1.25	— 0.27	s.
Medicine Hat, Assiniboia	27.56	29.83	— .03	56.8	+ 1.3	1.33	+ 0.17	e.
Swift Current, Assiniboia	27.35	29.90	+ .01	53.6	+ 2.6	2.64	+ 1.15	se.
Calgary, Alberta	26.34	29.85	— .03	49.2	— 1.8	4.05	+ 2.56	w.
Prince Albert, Sask.	.....	.....	.....	.....	.....	.....	.....	.....
Edmonton, Alberta	27.56	29.87	— .05	53.3	+ 3.7	2.92	+ 1.32	nw.
Battleford, Saskatchew'n	28.14	29.85	.....	53.6	.....	0.97	.....	se.
Spences Bridge, B. C.	29.09	29.90	.....	58.4	.....	0.70	.....	sw.
Hamilton, Bermuda	29.96	30.12	+ .06	68.6	.....	5.71	.....	s.
Anticosti, G. St. L.	29.94	29.97	+ .06	41.2	+ 0.5	1.05	.....	se.
April, 1894.								
St. Johns, N. F.	29.84	29.99	+ .11	32.9	— 3.3	*3.17	.....	ne.

TABLE IV.—*Hourly sunshine as deduced from sunshine recorders, May, 1894.*

Stations.	Instrument.	Percentage for each hour of local mean time ending with the respective hour.																Monthly summary.			
		A. M.								P. M.								Instrumental record.			Personal estimate.
		5	6	7	8	9	10	11	Noon.	1	2	3	4	5	6	7	8	Actual.	Possible.	Per cent of possible.	
																		Hours.	*Hours.*		
Baltimore, Md	T.	12	26	42	61	70	77	79	84	79	81	79	78	65	58	40	5	285.5	443.1	65	52
Bismarck, N. Dak	P.	71	71	73	73	73	78	80	69	69	75	72	70	71	67	75	74	338.6	467.2	72	68
Boston, Mass	T.	31	40	45	52	57	62	67	72	70	71	65	63	63	51	40	33	259.6	454.4	57	46
Buffalo, N. Y	T.	8	10	34	51	57	64	71	80	75	71	74	62	50	38	15	15	235.2	455.1	52	46
Chicago, Ill	T.	23	36	36	47	65	73	71	71	73	79	79	75	71	56	47	30	277.6	451.6	62	50
Cincinnati, Ohio	P.	44	46	52	57	62	65	64	61	56	58	58	65	55	51	43	13	249.0	444.2	56	47
Cleveland, Ohio	P.	27	45	40	54	59	56	57	51	58	72	69	61	54	45	38	20	241.9	448.8	54	40
Colorado Springs, Colo.	T.	56	56	56	60	76	83	84	82	75	72	59	56	38	28	32	26	271.8	444.5	62	41
Columbus, Ohio	T.	43	48	44	55	69	75	77	74	74	71	69	59	61	52	36	11	271.3	446.7	61	40
Denver, Colo	P.	50	65	67	68	73	74	72	75	66	61	65	61	53	45	35	9	276.8	443.7	63	46
Des Moines, Iowa	T.	53	60	64	67	70	84	92	95	95	91	90	81	73	72	68	61	350.6	452.3	78	69
Detroit, Mich	T.	22	29	34	40	58	71	72	71	71	69	59	56	53	36	35	18	237.7	452.5	53	42
Dodge City, Kans	P.	24	40	58	77	82	82	82	84	76	84	80	71	83	64	40	8	311.6	438.1	71	63
Eastport, Me	P.	25	26	30	37	38	40	46	44	51	55	54	43	42	38	27	21	183.9	460.1	40	31
Galveston, Tex.	P.	.....	44	79	95	97	97	97	97	92	96	98	93	91	82	52	.....	369.4	421.5	88	88
Helena, Mont	P.	55	56	63	68	77	78	73	68	65	65	62	60	57	58	54	61	298.9	467.7	64	57
Kansas City, Mo	P.	54	62	62	71	74	71	77	70	70	77	78	80	78	72	63	53	317.6	442.9	71	56
Key West, Fla	T.	.....	63	68	64	72	76	82	82	90	87	85	77	72	66	62	.....	311.8	414.8	75	52
Little Rock, Ark	T.	57	48	50	60	63	76	86	89	80	90	83	77	59	46	44	16	298.2	435.0	69	41
Louisville, Ky	T.	56	61	70	74	72	76	73	64	64	58	55	45	41	28	25	43	254.1	444.1	57	39
Memphis, Tenn	P.	11	51	59	66	71	67	65	67	71	72	69	67	61	61	49	38	277.2	433.8	64	61
New Haven, Conn	T.	7	17	42	56	67	71	74	77	77	74	72	65	59	45	27	23	257.3	447.8	58	45
New Orleans, La	T.	.....	47	54	72	83	83	85	86	88	81	81	75	70	50	37	.....	393.3	420.3	72	72
New York, N. Y.	T.	12	14	30	50	55	68	69	74	75	65	63	56	50	32	6	7	220.7	450.0	49	41
Philadelphia, Pa	T.	33	45	49	54	58	66	73	74	68	72	67	63	47	40	33	7	253.7	447.1	57	38
Portland, Me	T.	8	23	38	50	58	71	71	71	68	66	67	65	58	51	40	14	249.8	455.4	55	35
Portland, Oreg	P.	14	24	39	38	42	47	54	51	49	53	50	49	52	49	49	40	207.0	461.3	45	45
Rochester, N. Y	T.	19	32	35	39	51	51	53	55	51	52	53	55	45	36	28	2	199.4	455.9	44	35
Saint Louis, Mo	T.	41	36	42	57	71	78	75	77	79	83	81	77	72	60	48	6	293.0	441.5	66	56
Salt Lake City, Utah	T.	26	35	45	66	78	83	87	93	94	91	86	80	65	54	30	15	308.8	448.5	69	57
San Diego, Cal	P.	.....	5	18	26	39	59	75	78	76	82	78	71	65	49	24	.....	229.6	429.3	53	56
San Francisco, Cal	P.	14	16	34	51	53	58	63	66	75	84	82	78	71	65	35	23	258.4	440.0	59	49
Santa Fe, N. Mex	P.	42	69	77	86	89	89	89	85	84	84	78	70	73	61	49	60	335.1	434.9	77	63
Savannah, Ga	P.	76	63	75	78	83	83	81	73	70	81	77	71	69	55	27	.....	304.4	428.6	71	60
Tucson, Ariz	P.	61	74	88	89	93	93	92	92	90	89	88	90	92	89	80	.....	380.0	428.4	89	78
Vicksburg, Miss	T.	25	29	36	64	80	90	90	90	95	93	91	92	84	62	19	.....	313.9	429.1	73	70
Washington, D. C	P.	31	36	45	58	64	65	65	65	66	65	68	63	66	52	48	20	259.2	444.2	59	51
Wilmington, N. C	T.	18	32	35	65	75	73	68	69	78	68	57	56	57	37	32	.....	248.4	433.9	57	60

TABLE V.—*Mean temperature for each hour of seventy-fifth meridian time, May, 1894.*

Stations.	1 a. m.	2 a. m.	3 a. m.	4 a. m.	5 a. m.	6 a. m.	7 a. m.	8 a. m.	9 a. m.	10 a. m.	11 a. m.	Noon.	1 p. m.	2 p. m.	3 p. m.	4 p. m.	5 p. m.	6 p. m.	7 p. m.	8 p. m.	9 p. m.	10 p. m.	11 p. m.	Midnight.	Mean.
Abilene, Tex	70.6	69.1	67.9	67.1	66.6	65.8	65.5	66.4	69.0	71.8	74.4	76.3	77.5	79.4	80.8	81.8	81.8	81.4	80.4	79.0	76.2	74.2	72.0	71.3	73.6
Albany, N.Y	55.3	54.6	54.1	53.5	53.1	53.5	54.9	57.3	59.3	61.2	62.9	64.1	65.6	66.5	66.6	66.6	65.6	64.5	63.0	61.0	59.4	57.9	56.8	55.8	59.7
Alpena, Mich	45.9	45.8	45.4	45.0	44.6	44.8	46.1	47.9	49.3	49.9	50.6	51.2	51.6	51.7	51.5	52.2	51.9	50.5	49.6	48.5	47.9	47.4	47.1	46.3	48.4
Amarillo, Tex	61.5	60.5	59.5	58.6	57.7	56.3	55.8	56.0	57.9	60.9	64.0	66.5	68.6	70.3	72.1	73.5	74.0	74.1	73.6	72.8	69.6	66.4	64.7	62.9	64.9
Atlanta, Ga	64.8	64.1	63.3	62.5	61.4	60.8	61.2	63.8	66.3	69.2	71.5	73.3	74.3	74.8	75.2	75.7	75.7	74.7	72.5	70.2	69.0	67.8	66.5	65.4	68.8
Augusta, Ga	65.5	64.9	63.8	63.1	62.5	62.3	63.9	67.1	70.7	73.5	76.1	78.0	79.1	80.1	79.9	79.1	78.5	77.4	75.5	73.0	70.6	69.1	67.7	66.5	71.2
Baker City, Oreg	50.1	48.7	47.8	46.6	45.8	44.9	44.0	43.6	45.7	48.5	52.0	54.5	57.1	59.1	60.9	62.3	62.7	62.9	62.9	61.5	59.8	57.5	54.7	52.5	53.6
Baltimore, Md	60.3	59.4	58.6	58.2	58.0	58.3	59.8	62.2	63.8	65.8	67.4	68.9	70.0	70.8	71.2	71.5	70.2	69.7	67.6	65.8	64.4	63.1	62.0	61.1	64.5
Bismarck, N. Dak	51.0	49.9	48.9	47.7	47.0	46.6	46.1	48.7	51.7	55.0	57.6	60.2	62.1	63.3	64.5	65.1	64.5	65.2	65.2	64.0	60.9	57.3	55.0	52.8	56.3
Boston, Mass	53.6	53.3	52.5	52.1	51.8	52.3	53.6	55.9	57.3	58.7	59.6	60.3	60.6	60.9	61.2	60.5	60.4	60.0	59.2	57.7	56.7	56.0	54.8	54.0	56.8
Buffalo, N.Y	52.8	51.9	51.4	50.7	50.1	50.9	52.5	54.5	55.5	56.4	57.7	58.4	59.1	58.8	59.8	59.7	58.5	58.0	57.4	56.3	55.8	54.9	54.1	53.6	55.4
Charleston, S. C	68.9	68.5	68.1	67.5	66.9	66.6	68.0	70.5	72.9	75.0	76.6	76.8	77.3	77.6	77.0	76.4	75.6	74.5	72.4	70.7	70.4	70.1	69.9	69.5	72.0
Charlotte, N.C	63.8	62.6	61.6	61.0	60.3	60.1	61.7	64.6	66.8	69.4	71.5	73.2	74.7	75.8	76.4	76.1	75.1	73.8	71.5	69.9	68.4	67.1	65.9	64.8	68.2
Cheyenne, Wyo	48.9	47.9	46.6	45.4	44.6	43.8	43.4	45.7	51.4	54.6	57.4	59.3	61.1	61.9	62.5	63.1	63.4	62.7	62.1	60.7	58.3	55.3	52.7	51.0	54.3
Chicago, Ill	53.1	54.2	53.4	52.7	52.5	52.1	52.8	54.5	56.1	57.1	56.8	57.8	58.4	58.7	59.0	58.3	57.0	57.5	57.3	56.7	55.6	55.6	54.8	54.5	55.8
Cincinnati, Ohio	59.6	58.9	58.3	57.8	56.7	56.3	56.6	58.5	60.9	62.9	64.8	66.5	67.7	68.2	68.9	69.0	68.8	68.7	67.9	65.9	64.6	63.1	61.5	60.1	63.0
Cleveland, Ohio	54.3	54.0	53.5	53.2	52.8	52.6	53.3	56.1	57.5	58.9	60.0	60.6	61.1	61.9	62.6	61.5	61.3	61.1	60.4	58.9	58.1	57.2	56.6	55.5	57.6
Colorado Sp'ngs, Colo.	52.1	50.0	48.5	47.7	47.0	46.2	45.7	47.7	51.5	55.5	58.1	60.1	62.2	63.7	64.5	65.1	65.1	64.8	64.0	62.5	60.4	57.8	56.0	53.8	56.2
Columbus, Ohio	56.5	55.5	54.6	54.0	53.0	53.0	54.0	56.5	59.0	61.3	63.5	64.9	66.1	66.5	67.2	67.0	67.1	66.4	64.6	62.3	60.8	59.2	58.0	56.8	60.3
Denver, Colo	56.1	54.5	54.0	53.2	52.6	51.6	50.7	51.4	53.8	57.2	60.5	63.2	65.6	66.9	67.8	68.1	68.1	67.4	67.2	66.4	64.5	61.8	58.9	57.8	59.9
Des Moines, Iowa	59.8	58.0	56.8	55.5	54.5	53.5	53.2	55.1	57.8	60.6	63.0	65.3	67.0	68.8	69.8	70.5	71.1	70.5	70.0	68.8	66.5	64.6	62.6	61.0	62.7
Detroit, Mich	52.3	51.5	51.2	50.9	50.6	50.7	51.3	53.4	55.0	57.4	59.0	60.1	61.1	62.1	61.8	61.9	61.5	60.5	59.5	57.5	55.8	54.5	53.5	52.3	56.1
Dodge City, Kans	58.3	57.1	55.8	55.3	54.3	53.4	53.4	56.9	59.6	63.3	66.8	69.8	72.7	74.4	76.0	77.0	77.1	76.6	75.3	71.5	66.7	63.6	61.5	59.6	64.8
Duluth, Minn	45.8	45.2	44.8	44.3	44.0	43.7	44.1	45.3	46.3	47.5	48.4	49.5	50.8	51.1	51.2	51.5	51.8	51.5	51.2	49.8	48.2	47.5	47.0	45.8	47.7
Eastport, Me	43.9	43.3	42.5	42.0	41.9	42.7	44.0	45.4	47.1	48.2	49.4	50.5	51.7	51.7	51.6	51.1	50.3	49.5	48.2	47.1	46.3	45.7	45.1	44.6	46.8
El Paso, Tex	70.4	68.6	66.5	65.1	63.7	62.4	60.8	61.1	64.0	68.5	73.2	77.0	79.8	82.1	83.7	84.8	86.2	86.1	85.7	84.5	81.8	78.1	75.1	72.5	74.2
Fort Smith, Ark	65.7	64.6	63.8	62.6	61.9	61.5	61.7	64.5	66.3	69.1	71.3	74.0	75.6	76.7	77.3	77.6	77.7	77.1	75.9	73.7	71.6	69.8	68.3	66.9	69.8
Galveston, Tex	75.2	75.0	75.0	74.6	74.4	74.2	74.2	74.8	75.8	76.8	77.5	78.3	78.6	78.7	78.7	78.9	78.7	78.3	77.9	76.9	76.5	76.0	75.7	75.5	76.5
Grand Haven, Mich	51.4	50.7	50.3	49.7	49.2	49.1	49.7	50.9	52.1	53.4	53.9	55.3	55.4	55.7	56.1	55.4	55.3	55.2	54.5	53.3	53.3	52.7	52.2	51.6	52.8
Havre, Mont	49.6	48.4	47.2	46.5	45.5	44.7	44.8	46.7	50.4	53.3	56.7	59.3	61.6	63.4	64.9	66.0	66.7	66.5	65.2	64.4	61.7	58.0	55.0	52.8	55.8
Helena, Mont	51.1	49.8	48.6	47.5	46.7	45.7	45.1	46.3	49.1	50.6	52.8	55.2	57.6	59.9	61.5	62.4	62.8	62.8	62.7	61.7	60.4	57.4	54.6	52.9	54.4
Huron, S. Dak	52.8	51.2	50.4	49.0	48.3	47.1	47.5	52.3	55.3	59.9	63.2	65.9	67.8	69.4	69.8	70.7	71.6	71.1	70.2	67.6	63.9	60.7	57.8	55.3	60.0
Indianapolis, Ind	56.9	56.3	55.7	54.6	53.9	54.0	55.8	58.3	60.9	63.2	65.2	66.8	67.6	68.7	69.1	69.3	68.1	66.8	65.0	63.5	61.3	59.7	58.5	57.8	61.5
Jacksonville, Fla	69.6	68.9	68.4	67.8	67.2	67.4	69.2	72.0	74.4	76.4	78.2	79.9	81.3	81.9	81.9	80.9	79.5	77.7	75.6	73.5	72.4	71.5	71.0	70.4	74.0
Kansas City, Mo	62.2	61.5	60.4	59.8	59.5	58.3	57.5	58.3	59.9	62.4	64.8	66.7	68.3	69.5	70.7	71.7	72.5	72.4	71.5	70.1	68.6	66.9	64.9	63.6	65.1
Key West, Fla	75.7	75.3	75.3	75.2	75.2	74.9	76.8	77.8	78.6	79.3	80.0	80.0	80.7	81.1	81.2	80.5	79.8	79.1	77.7	77.1	76.9	76.6	76.3	76.1	77.8
Knoxville, Tenn	62.5	61.5	60.8	59.9	59.2	58.8	59.3	61.2	63.3	66.1	68.3	70.1	71.5	72.1	71.7	71.7	71.7	71.1	69.9	68.2	66.8	65.5	64.2	63.1	65.8
Lander, Wyo	50.5	48.9	46.8	46.0	41.5	43.2	42.0	44.1	49.3	54.5	57.7	60.4	62.4	64.3	66.0	66.8	67.8	67.5	66.3	64.2	60.8	56.5	54.4	52.9	55.8
Little Rock, Ark	66.3	65.5	65.0	64.0	63.4	62.6	62.8	64.5	66.4	68.4	70.9	73.1	74.8	76.1	76.7	77.2	77.3	76.2	75.2	73.0	71.0	69.4	68.2	67.1	69.8
Louisville, Ky	60.0	58.9	58.6	58.1	57.4	56.9	57.5	60.2	63.5	66.0	68.3	69.9	71.0	71.5	71.5	72.3	71.8	70.6	68.8	66.1	64.7	63.4	61.8	63.5	64.6
Lynchburg, Va	61.6	60.7	59.9	59.3	58.5	58.5	60.6	64.2	67.2	69.5	71.7	73.2	75.0	75.4	74.8	74.8	73.9	73.1	71.2	69.0	67.1	65.7	63.9	62.6	67.1
Marquette, Mich	45.8	45.5	45.2	44.7	44.4	44.2	44.7	46.0	47.2	47.5	47.7	48.1	48.2	48.1	47.7	48.2	48.8	48.7	48.5	47.8	47.1	46.4	46.0	45.5	46.7
Memphis, Tenn	65.5	64.6	63.0	62.5	62.0	61.4	62.1	64.1	65.8	67.9	69.3	71.1	71.9	73.3	74.3	75.1	75.1	74.3	73.5	71.4	69.1	67.2	66.4	65.5	68.2
Milwaukee, Wis	51.2	51.0	50.6	50.2	49.1	48.7	48.8	50.6	52.3	53.9	54.7	56.2	55.7	56.3	56.0	56.1	57.0	56.3	56.5	54.8	54.0	53.0	52.5	51.7	53.2
Montgomery, Ala	68.5	67.5	66.7	66.0	65.4	64.7	65.9	68.4	71.9	74.6	77.2	79.2	81.1	82.5	83.5	82.4	80.0	78.7	77.1	75.1	73.4	72.2	70.6	69.3	73.4
Moorhead, Minn	50.9	49.3	48.8	48.0	46.9	45.7	46.8	50.3	53.6	57.0	59.1	61.1	62.5	63.4	64.5	65.1	65.4	65.4	64.7	62.4	58.9	56.1	54.2	52.5	56.3
Nantucket, Mass	50.0	50.0	49.8	49.8	50.1	50.9	52.2	53.6	54.4	54.9	55.6	56.1	56.4	56.5	56.1	55.4	54.5	52.6	51.2	50.8	50.7	50.4	50.3	50.0	52.6
Nashville, Tenn	62.8	62.2	61.3	60.5	59.9	59.5	60.2	61.9	64.3	66.6	68.7	69.8	71.0	72.0	72.5	72.8	72.5	71.8	71.0	69.2	66.6	65.4	64.0	63.1	66.2
New Haven, Conn	53.2	52.3	51.6	50.9	50.7	51.9	53.7	56.6	58.6	60.2	62.1	63.2	63.8	64.1	64.0	64.1	63.6	62.0	60.0	58.5	57.2	56.1	55.2	54.1	57.8
New Orleans, La	71.0	70.4	70.1	69.9	69.6	69.4	70.1	72.6	75.1	77.2	78.2	79.5	80.1	80.6	80.8	81.0	80.8	79.7	77.7	76.1	74.4	73.2	72.2	71.6	75.1
New York, N.Y	55.9	55.1	54.5	54.2	53.9	54.5	55.5	57.5	60.0	61.5	63.2	64.2	65.8	66.3	65.8	65.6	64.8	63.7	62.2	61.0	60.0	58.7	57.7	57.0	59.9
Norfolk, Va	63.7	63.5	63.0	62.7	62.2	62.4	63.6	66.6	68.7	71.0	72.3	73.3	74.2	74.5	74.7	74.2	72.8	71.4	69.9	68.1	67.0	66.2	65.2	64.7	68.2
North Platte, Nebr	57.1	55.4	54.2	52.9	51.4	50.3	49.7	53.1	56.8	60.5	63.3	65.8	68.6	70.6	72.1	73.0	73.3	72.6	71.8	70.1	66.2	63.0	60.8	59.0	62.1
Omaha, Nebr	61.2	59.6	58.7	57.6	56.4	55.4	55.1	56.1	58.1	61.0	63.6	66.2	68.3	70.4	71.9	72.9	73.5	73.2	72.3	70.8	68.5	66.6	64.8	63.0	64.4
Philadelphia, Pa	58.0	57.5	57.0	56.7	56.5	56.7	57.8	59.5	61.6	63.6	65.8	67.4	68.5	69.5	70.4	69.8	68.8	67.5	65.6	63.7	62.3	61.0	59.9	59.0	62.7
Pikes Peak, Colo	22.8	22.4	22.1	21.9	21.6	21.4	21.3	21.8	22.3	23.5	24.8	26.4	27.5	28.4	28.7	29.0	29.0	28.5	27.8	26.9	25.3	24.9	24.0	23.4	24.8
Pittsburg, Pa	58.8	58.0	57.1	56.4	55.7	55.2	56.0	58.5	61.0	63.0	64.7	66.3	67.6	68.0	68.2	68.7	68.1	67.2	65.4	63.9	62.3	61.4	60.1	59.3	62.1
Portland, Oreg	54.6	53.5	52.4	51.0	50.1	49.1	48.3	47.9	48.1	49.6	50.7	52.4	54.5	56.4	58.4	59.9	61.4	62.0	62.6	62.5	61.6	60.3	58.4	56.6	55.1
Rapid City, S. Dak	54.5	53.6	52.5	51.7	50.6	49.4	49.8	52.1	56.2	59.5	61.6	63.3	64.8	66.3	67.4	68.4	68.6	68.5	67.2	65.2	62.4	58.2	56.5	55.4	59.3
Red Bluff, Cal	65.3	63.6	62.4	61.1	59.8	58.7	57.6	57.0	57.1	56.6	62.6	65.1	68.0	70.7	72.5	74.2	75.4	76.3	76.1	75.6	74.3	71.8	69.0	66.6	66.4
Rochester, N.Y	53.9	53.0	52.3	52.1	51.7	50.8	51.7	53.8	55.9	57.5	59.0	59.7	60.5	60.8	61.2	61.5	61.0	60.5	59.3	57.8	56.5	55.7	54.7	54.0	56.5
Roseburg, Oreg	52.5	50.5	49.2	47.6	46.6	45.8	45.0	44.5	45.6	47.9	50.4	53.4	56.1	58.8	61.2	62.8	64.5	65.4	65.5	64.6	62.9	60.5	57.6	55.2	54.8
St. Louis, Mo	62.8	61.7	60.8	60.3	59.5	59.2	59.6	61.3	63.4	65.3	67.5	68.8	69.3	70.3	71.2	71.8	71.2	70.8	69.8	68.3	67.1	65.9	64.6	63.5	65.7
St. Paul, Minn	55.2	53.9	52.6	51.6	50.9	50.3	50.7	52.9	54.2	56.2	58.4	60.3	62.3	63.5	64.7	65.2	65.6	65.1	64.4	63.3	61.3	59.7	57.9	56.5	58.2
Salt Lake City, Utah	57.9	57.6	56.7	55.4	54.4	53.4	53.3	53.2	54.6	58.0	61.0	63.5	65.1	66.7	67.7	68.6	68.7	69.1	68.8	67.6	66.2	63.0	60.9	59.5	61.3
San Diego, Cal	55.8	55.3	55.3	55.1	54.9	54.6	54.6	55.0	55.1	56.7	58.1	59.3	60.4	61.3	62.0	62.1	62.1	61.9	61.1	60.4	58.7	57.7	57.1	56.8	58.0
San Francisco, Cal	52.6	52.5	52.1	52.0	51.8	51.5	51.3	51.1	51.4	52.5	53.9	55.4	56.9	57.7	58.5	58.9	58.4	58.5	57.8	56.7	55.7	55.3	53.5	52.9	54.5
Santa Fe, N. Mex	55.6	54.4	53.3	52.0	50.3	49.4	48.4	50.5	54.5	56.4	58.6	60.9	63.0	64.7	66.1	67.4	67.5	67.3	66.8	65.9	63.5	60.5	58.1	56.7	58.8
Sault Ste. Marie, Mich	44.4	44.2	43.9	44.0	43.6	43.5	44.0	45.1	46.6	47.9	49.1	49.9	51.0	51.9	52.7	52.4	52.2	51.3	49.7	48.5	46.6	46.0	45.4	44.9	47.4
Savannah, Ga	67.9	67.3	66.9	66.2	65.9	65.7	67.5	70.8	73.6	76.2	77.9	79.0	79.8	78.5	78.8	77.7	76.4	74.9	73.0	70.7	69.5	69.2	68.8	68.5	72.2
Seattle, Wash	52.0	51.3	50.4	49.7	49.0	48.3	47.8	47.3	47.1	48.3	49.7	51.0	52.2	53.8	55.6	56.8	57.7	58.4	58.5	58.5	57.8	56.7	55.1	54.0	52.8
Shreveport, La	70.2	69.4	68.5	67.8	67.1	66.5	66.9	68.4	70.3	72.9	75.1	76.7	78.6	79.8	80.5	81.2	81.4	81.1	79.6	77.4	75.3	73.8	72.5	71.5	73.9
Spokane, Wash	54.4	52.9	51.5	50.4	49.1	48.4	47.6	48.1	49.6	51.6	54.7	56.9	58.9	60.9	62.6	64.3	65.0	65.7	65.5	65.3	63.9	62.3	59.5	57.9	57.0
Titusville, Fla	70.4	69.7	69.2	68.4	67.4	67.3	70.1	73.6	75.4	77.6	78.6	78.9	79.5	79.7	78.8	78.6	78.0	77.0	75.9	74.6	74.0	73.4	72.2	71.5	74.2
Toledo, Ohio	53.5	53.1	53.1	52.9	52.3	52.1	53.1	54.9	57.4	59.2	60.8	61.9	62.7	63.6	62.9	63.3	62.5	62.1	60.7	58.5	57.0	55.7	54.7	53.5	57.6
Tucson, Ariz	71.1	68.1	65.2	62.5	60.3	58.4	56.7	56.5	62.0	69.5	75.2	79.8	82.5	84.4	86.3	87.6	88.3	88.8	88.3	87.0	83.9	80.0	76.9	74.1	74.7
Vicksburg, Miss	69.4	68.6	68.1	67.0	66.3	65.4	65.3	67.2	69.3	71.6	74.1	76.0	77.7	79.2	80.4	81.0	81.2	80.2	77.8	74.8	73.3	72.1	71.0	69.8	72.8
Washington, D.C	60.2	59.5	58.9	58.3	58.0	58.2	60.3	63.4	65.4	67.5	69.3	70.9	71.9	72.4	72.6	72.1	72.1	70.9	68.7	66.3	64.6	63.3	61.8	60.8	65.3
Wilmington, N.C	65.6	65.2	64.7	64.4	63.7	63.5	65.4	69.2	71.0	73.0	74.2	75.3	75.7	75.6	74.9	74.4	74.5	73.4	71.5	69.7	68.9	67.6	66.7	66.2	69.8
Winnemucca, Nev	54.5	52.8	50.7	49.7	48.1	47.0	46.1	44.9	45.7	48.9	52.5	55.4	58.5	60.5	62.4	64.5	65.8	66.7	67.0	66.5	65.4	62.5	59.3	56.6	56.3
Yuma, Ariz	72.3	70.6	69.2	67.6	65.7	64.0	63.1	62.8	66.4	71.9	77.5	81.1	84.4	86.9	88.9	90.6	91.8	92.1	91.6	89.2	86.5	82.2	77.6	74.2	77.8

TABLE VI.—*Mean pressure for each hour of seventy-fifth meridian time, May, 1894.*

Stations.	1 a. m.	2 a. m.	3 a. m.	4 a. m.	5 a. m.	6 a. m.	7 a. m.	8 a. m.	9 a. m.	10 a. m.	11 a. m.	Noon.	1 p. m.	2 p. m.	3 p. m.	4 p. m.	5 p. m.	6 p. m.	7 p. m.	8 p. m.	9 p. m.	10 p. m.	11 p. m.	Midnight.	Mean.
Abilene, Tex	28.152	.153	.148	.147	.153	.160	.174	.183	.188	.194	.192	.192	.180	.167	.147	.125	.104	.094	.091	.101	.118	.138	.150	.156	.150
Albany, N. Y	29.883	.881	.876	.878	.886	.895	.902	.899	.897	.893	.888	.875	.859	.848	.838	.832	.829	.832	.840	.852	.863	.871	.873	.873	.869
Alpena, Mich	29.283	.279	.276	.276	.280	.289	.297	.294	.295	.294	.290	.283	.278	.274	.271	.263	.260	.261	.261	.272	.279	.285	.286	.289	.280
Atlanta, Ga	28.823	.817	.817	.820	.825	.842	.851	.860	.864	.863	.858	.846	.830	.819	.804	.795	.790	.787	.794	.800	.810	.820	.820	.819	.824
Augusta, Ga	29.801	.793	.786	.787	.793	.805	.817	.824	.826	.823	.819	.807	.787	.772	.757	.748	.741	.740	.748	.761	.772	.786	.790	.793	.789
Baltimore, Md	29.745	.739	.739	.745	.754	.764	.771	.775	.775	.771	.764	.752	.737	.721	.709	.703	.701	.702	.711	.724	.733	.733	.734	.731	.739
Bismarck, N. Dak	28.158	.157	.152	.151	.159	.162	.167	.173	.176	.177	.171	.169	.158	.150	.142	.136	.129	.131	.126	.126	.133	.145	.154	.160	.153
Boston, Mass	29.845	.843	.841	.843	.852	.857	.863	.862	.857	.856	.848	.837	.826	.817	.808	.807	.808	.810	.818	.827	.838	.837	.838	.835	.836
Buffalo, N. Y	29.192	.189	.192	.191	.202	.210	.215	.222	.220	.221	.220	.217	.208	.203	.195	.188	.185	.186	.185	.187	.191	.189	.187	.182	.199
Chicago, Ill	29.067	.061	.059	.063	.067	.074	.083	.089	.090	.093	.094	.089	.082	.074	.066	.061	.056	.054	.056	.059	.068	.073	.074	.075	.072
Cincinnati, Ohio	29.289	.287	.290	.291	.300	.311	.319	.326	.325	.325	.322	.311	.300	.289	.274	.265	.260	.256	.260	.264	.280	.288	.289	.290	.292
Cleveland, Ohio	29.133	.131	.128	.131	.137	.151	.161	.169	.170	.169	.166	.156	.151	.136	.130	.123	.121	.116	.120	.123	.124	.126	.123	.125	.139
Colorado Sp'gs, Colo	24.046	.048	.051	.049	.050	.051	.054	.059	.059	.058	.051	.044	.034	.016	.009	.990	.985	.979	.984	.992	.007	.023	.039	.046	.031
Columbus, Ohio	29.043	.043	.045	.046	.050	.058	.067	.070	.072	.070	.066	.058	.044	.035	.022	.015	.012	.010	.015	.023	.031	.036	.039	.041	.042
Denver, Colo	24.757	.758	.757	.756	.756	.756	.763	.771	.778	.779	.776	.772	.762	.748	.733	.725	.715	.711	.710	.711	.720	.736	.751	.758	.748
Des Moines, Iowa	29.021	.022	.021	.025	.033	.039	.052	.061	.067	.067	.065	.060	.049	.037	.025	.011	.002	.996	.993	.965	.005	.015	.024	.026	.030
Detroit, Mich	29.155	.148	.150	.149	.154	.161	.173	.178	.179	.179	.175	.168	.158	.151	.142	.130	.125	.123	.124	.128	.140	.149	.152	.155	.152
Dodge City, Kans	27.363	.365	.365	.365	.369	.377	.388	.397	.406	.409	.407	.404	.397	.384	.368	.355	.337	.325	.320	.317	.328	.344	.366	.369	.368
Duluth, Minn	29.233	.234	.235	.238	.242	.249	.256	.259	.259	.255	.249	.245	.233	.227	.222	.218	.217	.215	.214	.220	.229	.238	.240	.242	.236
Eastport, Me	29.908	.903	.903	.905	.912	.917	.921	.923	.923	.921	.914	.906	.897	.888	.882	.878	.879	.882	.891	.901	.905	.907	.908	.903	.903
El Paso, Tex	26.141	.142	.141	.142	.146	.152	.165	.180	.195	.203	.200	.193	.181	.165	.146	.124	.102	.085	.079	.076	.085	.100	.116	.132	.141
Galveston, Tex	29.965	.960	.951	.950	.954	.969	.974	.983	.993	.995	.997	.996	.988	.980	.967	.952	.942	.934	.932	.935	.944	.956	.967	.969	.964
Grand Haven, Mich	29.239	.234	.234	.235	.239	.250	.261	.264	.271	.270	.267	.263	.258	.253	.241	.233	.229	.223	.225	.229	.235	.241	.242	.241	.245
Havre, Mont	27.290	.294	.299	.298	.297	.300	.305	.304	.306	.308	.302	.299	.294	.282	.274	.266	.257	.250	.247	.245	.249	.260	.272	.282	.283
Helena, Mont	25.804	.808	.811	.810	.812	.811	.812	.811	.816	.815	.811	.805	.795	.783	.772	.765	.758	.752	.750	.749	.755	.767	.788	.797	.790
Huron, S. Dak	28.533	.536	.535	.535	.537	.542	.550	.557	.560	.557	.553	.549	.541	.533	.523	.511	.496	.492	.489	.495	.503	.519	.533	.537	.530
Indianapolis, Ind	29.149	.148	.146	.147	.149	.157	.164	.169	.167	.173	.169	.163	.153	.147	.136	.126	.119	.122	.122	.130	.139	.148	.150	.149	.148
Jacksonville, Fla	29.975	.968	.963	.964	.971	.983	.991	.995	.993	.991	.983	.968	.948	.932	.916	.907	.905	.909	.924	.937	.956	.969	.968	.968	.958
Kansas City, Mo	28.959	.954	.944	.943	.946	.957	.974	.985	.994	.997	.000	.998	.985	.976	.967	.953	.941	.937	.931	.931	.942	.956	.968	.969	.963
Key West, Fla	29.992	.979	.968	.964	.967	.976	.990	.999	.006	.009	.010	.003	.991	.979	.962	.946	.945	.947	.959	.973	.982	.992	.995	.993	.980
Knoxville, Tenn	28.962	.959	.959	.964	.971	.983	.989	.995	.997	.995	.993	.981	.968	.954	.942	.932	.931	.927	.931	.966	.949	.957	.958	.958	.962
Little Rock, Ark	29.666	.662	.656	.657	.660	.667	.684	.683	.701	.705	.705	.700	.685	.672	.655	.640	.630	.622	.620	.631	.639	.656	.664	.669	.664
Louisville, Ky	29.405	.402	.404	.405	.413	.422	.433	.439	.439	.437	.436	.424	.413	.403	.391	.380	.374	.368	.372	.380	.395	.403	.404	.407	.406
Lynchburg, Va	29.240	.238	.237	.240	.252	.265	.274	.276	.275	.272	.261	.248	.230	.214	.199	.190	.185	.187	.199	.210	.222	.229	.229	.232	.233
Marquette, Mich	29.155	.150	.151	.152	.152	.156	.164	.167	.166	.168	.174	.172	.168	.164	.160	.160	.159	.157	.161	.161	.167	.169	.173	.167	.162
Memphis, Tenn	29.644	.644	.643	.646	.651	.665	.675	.684	.689	.691	.692	.685	.675	.664	.647	.632	.624	.618	.620	.627	.641	.653	.650	.650	.655
Milwaukee, Wis	29.199	.200	.200	.205	.212	.223	.229	.238	.243	.238	.235	.231	.227	.222	.218	.206	.197	.192	.195	.201	.203	.208	.205	.204	.214
Moorhead, Minn	28.915	.916	.918	.925	.927	.929	.935	.937	.938	.936	.931	.928	.920	.909	.903	.896	.891	.890	.888	.893	.901	.910	.916	.921	.915
Nantucket, Mass	29.988	.983	.977	.978	.985	.991	.996	.992	.992	.995	.992	.985	.976	.971	.961	.958	.955	.958	.964	.973	.977	.977	.977	.975	.993
Nashville, Tenn	29.400	.396	.395	.400	.403	.414	.427	.435	.438	.438	.435	.428	.411	.402	.386	.377	.371	.368	.371	.380	.392	.405	.406	.401	.403
New Haven, Conn	29.847	.843	.839	.843	.851	.857	.860	.865	.861	.858	.851	.835	.825	.816	.809	.805	.802	.806	.815	.825	.834	.835	.838	.834	.836
New Orleans, La	29.949	.943	.935	.935	.938	.950	.961	.969	.977	.977	.975	.968	.955	.945	.930	.915	.907	.903	.906	.913	.921	.933	.944	.946	.942
New York, N. Y	29.775	.772	.770	.769	.773	.782	.789	.793	.790	.788	.781	.772	.760	.750	.741	.737	.735	.735	.741	.748	.757	.761	.763	.761	.764
Norfolk, Va	29.901	.896	.893	.895	.905	.920	.927	.935	.935	.933	.929	.917	.903	.883	.867	.861	.855	.859	.866	.878	.891	.893	.894	.892	.897
Omaha, Neb	28.784	.785	.787	.796	.796	.803	.815	.822	.827	.831	.825	.817	.803	.791	.778	.765	.755	.750	.747	.745	.760	.773	.785	.789	.789
Philadelphia, Pa	29.838	.835	.833	.833	.840	.850	.855	.860	.859	.858	.848	.839	.822	.811	.800	.797	.793	.795	.802	.815	.823	.827	.827	.825	.829
Pikes Peak, Colo	17.826	.818	.808	.805	.800	.795	.796	.801	.812	.830	.839	.850	.854	.854	.853	.852	.846	.843	.840	.837	.837	.840	.843	.839	.830
Pittsburg, Pa	29.083	.077	.076	.075	.083	.094	.106	.111	.109	.105	.097	.086	.077	.064	.052	.043	.040	.043	.052	.063	.069	.072	.073	.074	.076
Portland, Oreg	29.881	.885	.889	.886	.885	.885	.880	.882	.884	.888	.890	.887	.885	.879	.866	.857	.849	.839	.833	.829	.825	.832	.847	.861	.868
Rochester, N. Y	29.392	.390	.394	.396	.409	.421	.432	.434	.434	.429	.423	.418	.408	.401	.389	.388	.384	.382	.387	.388	.392	.389	.387	.383	.402
Roseburg, Oreg	29.457	.457	.455	.453	.449	.447	.446	.446	.452	.454	.456	.455	.450	.441	.434	.422	.412	.400	.389	.387	.392	.399	.417	.435	.434
St. Louis, Mo	29.366	.362	.362	.359	.364	.367	.376	.381	.383	.380	.379	.375	.370	.358	.351	.341	.336	.334	.336	.343	.356	.370	.371	.371	.362
St. Paul, Minn	29.036	.036	.035	.039	.042	.049	.057	.064	.063	.061	.058	.051	.040	.027	.017	.009	.001	.000	.000	.002	.017	.030	.039	.042	.034
Salt Lake City, Utah	25.622	.624	.623	.624	.626	.630	.635	.644	.654	.660	.661	.662	.658	.648	.636	.623	.611	.602	.595	.587	.590	.597	.608	.618	.627
San Diego, Cal	29.898	.894	.887	.878	.872	.870	.869	.877	.889	.898	.903	.906	.907	.905	.903	.897	.887	.878	.872	.867	.871	.881	.893	.899	.887
San Francisco, Cal	29.822	.819	.816	.810	.805	.802	.802	.805	.815	.825	.833	.835	.838	.839	.835	.829	.823	.809	.801	.795	.794	.795	.801	.810	.815
Santa Fe, N. Mex	23.281	.282	.282	.281	.281	.282	.288	.300	.306	.313	.314	.313	.305	.293	.283	.272	.260	.251	.244	.240	.246	.256	.270	.280	.280
S'lt Ste. Marie, Mich	29.236	.232	.225	.226	.232	.241	.254	.255	.251	.249	.247	.243	.236	.231	.226	.222	.222	.222	.226	.234	.234	.241	.241	.239	.236
Savannah, Ga	29.905	.899	.895	.896	.903	.918	.926	.934	.935	.932	.924	.913	.897	.884	.867	.861	.858	.862	.877	.889	.895	.902	.903	.900	.899
Seattle, Wash	29.889	.888	.891	.890	.892	.890	.890	.891	.893	.895	.898	.897	.891	.890	.885	.880	.877	.871	.865	.862	.861	.865	.868	.877	.883
Spokane, Wash	27.918	.919	.919	.921	.921	.920	.922	.929	.931	.937	.935	.932	.924	.928	.920	.917	.906	.895	.885	.882	.884	.887	.897	.901	.914
Toledo, Ohio	29.225	.216	.212	.213	.219	.225	.235	.238	.241	.239	.238	.233	.223	.217	.205	.195	.196	.194	.199	.206	.216	.223	.223	.226	.219
Vicksburg, Miss	29.698	.695	.691	.693	.698	.707	.724	.738	.743	.744	.743	.738	.728	.710	.692	.674	.604	.659	.660	.669	.675	.687	.692	.696	.701
Washington, D. C	29.832	.822	.821	.823	.828	.838	.847	.854	.854	.853	.850	.838	.828	.816	.799	.794	.791	.788	.795	.805	.820	.824	.825	.823	.823
Wilmington, N. C	29.912	.907	.904	.904	.918	.932	.941	.942	.938	.936	.928	.917	.902	.894	.883	.879	.876	.880	.888	.897	.912	.916	.913	.908	.909
Yuma, Ariz	29.663	.665	.663	.658	.656	.659	.665	.675	.693	.703	.707	.707	.704	.693	.674	.657	.635	.617	.604	.601	.600	.611	.630	.649	.658

TABLE VII.—*Average wind movement for each hour of seventy-fifth meridian time, May, 1894.*

Stations.	1 a. m.	2 a. m.	3 a. m.	4 a. m.	5 a. m.	6 a. m.	7 a. m.	8 a. m.	9 a. m.	10 a. m.	11 a. m.	Noon.	1 p. m.	2 p. m.	3 p. m.	4 p. m.	5 p. m.	6 p. m.	7 p. m.	8 p. m.	9 p. m.	10 p. m.	11 p. m.	Midnight.	Mean.
Abilene, Tex	10.0	9.9	10.8	10.2	9.5	9.0	9.0	9.2	11.4	12.7	12.9	14.0	13.4	12.8	11.8	11.6	12.0	13.1	12.7	12.5	10.6	10.5	10.7	10.3	11.3
Albany, N. Y	6.0	6.2	5.6	6.1	6.3	5.8	6.7	7.9	8.9	10.2	10.4	9.1	10.5	10.5	9.8	10.3	9.9	9.3	7.8	7.0	7.1	6.9	6.4	6.4	8.0
Alpena, Mich	8.0	8.7	8.7	9.1	8.9	8.9	9.1	10.7	12.6	13.0	13.6	14.0	14.3	14.9	14.2	12.9	12.8	11.2	9.4	8.1	7.9	7.8	8.3	8.2	10.6
Amarillo, Tex	19.5	18.9	18.2	18.2	17.9	17.3	16.0	16.6	19.1	21.2	20.6	18.8	17.7	17.6	17.7	18.9	20.0	20.7	21.6	22.3	21.3	19.6	19.1	19.3	19.1
Atlanta, Ga	7.0	7.5	7.6	7.5	8.0	7.6	7.5	7.8	8.4	8.7	9.1	9.8	10.4	10.5	10.7	10.6	11.1	11.6	10.5	8.2	7.5	7.1	6.8	7.4	8.7
Atlantic City, N. J	11.7	11.2	10.6	10.8	10.7	11.3	10.8	11.7	11.5	11.6	11.2	12.6	12.4	13.0	13.3	13.2	12.8	12.3	11.5	11.3	11.1	10.8	11.7	12.1	11.7
Augusta, Ga	3.2	3.6	3.6	3.1	3.1	2.7	2.9	3.7	4.3	5.0	6.0	6.7	7.6	7.7	8.6	9.2	8.5	7.5	6.9	5.6	5.0	4.2	4.2	4.0	5.3
Baker City, Oreg	3.6	3.4	3.7	3.5	3.6	4.0	4.7	4.5	4.4	4.4	4.5	4.8	5.1	5.6	5.9	6.2	6.2	6.9	7.0	6.9	6.7	5.6	4.0	4.4	5.0
Baltimore, Md	6.3	6.4	5.9	5.5	5.3	5.3	6.2	7.3	8.5	8.9	9.6	9.4	10.1	10.6	10.5	10.7	10.8	9.4	8.4	7.1	7.3	6.4	7.1	6.7	7.9
Bismarck, N. Dak	10.7	11.4	11.5	11.4	11.2	8.8	8.7	10.4	11.5	13.0	14.5	15.8	16.9	17.9	18.1	18.4	18.6	18.3	17.6	17.9	14.5	13.6	13.2	11.5	14.0
Block Island, R. I	12.2	12.2	11.9	12.5	12.3	12.9	14.2	15.0	15.0	15.1	14.9	16.0	17.0	17.4	17.3	16.8	16.2	15.3	14.3	13.9	13.7	12.8	12.3	11.5	14.3
Boston, Mass	8.2	8.3	9.2	9.4	9.1	9.3	10.1	10.5	11.3	12.2	11.9	12.2	14.0	13.6	13.0	13.3	13.2	12.1	11.0	10.5	10.5	10.2	9.4	8.5	10.9
Buffalo, N. Y	8.2	8.3	8.8	9.5	8.2	8.2	8.3	9.0	9.3	10.1	10.7	10.6	11.7	11.6	12.0	12.0	11.6	11.1	9.9	9.5	8.7	8.8	8.5	8.3	9.7
Cairo, Ill	7.1	7.0	6.7	6.4	6.3	6.3	6.2	7.0	8.7	9.5	9.9	10.1	10.3	10.5	11.9	11.8	11.1	9.7	8.4	7.6	6.8	6.7	6.5	6.7	8.3
Cape Henry, Va	10.6	10.3	9.6	10.5	10.6	10.5	10.2	11.1	10.9	11.3	11.6	12.0	11.8	12.7	12.3	12.4	12.6	11.5	9.9	9.4	10.5	9.5	10.2	11.5	11.0
Charleston, S. C	6.2	5.5	5.4	5.0	4.9	5.5	5.9	7.0	7.8	7.9	8.7	10.5	11.8	12.6	12.8	12.5	12.7	12.1	10.7	9.1	8.6	7.7	7.7	7.1	8.6
Charlotte, N. C	5.4	4.9	4.4	4.3	4.4	5.2	5.0	5.6	6.4	5.8	5.7	6.4	6.9	6.9	7.4	8.2	8.1	7.5	6.6	4.7	4.7	5.7	5.5	5.0	5.9
Chattanooga, Tenn	5.6	5.4	5.1	5.0	5.0	4.8	4.6	4.9	5.3	6.5	7.7	8.2	8.3	8.7	9.2	9.9	10.2	9.1	8.2	7.1	6.4	5.6	5.3	5.2	6.7
Cheyenne, Wyo	9.9	11.0	10.7	9.9	9.4	8.9	8.6	9.5	10.4	12.8	14.7	15.1	14.9	15.6	15.7	17.3	17.5	17.5	15.8	16.7	14.6	12.3	11.4	10.9	13.0
Chicago, Ill	17.0	17.5	18.1	18.0	18.2	18.0	16.3	16.9	17.8	18.5	19.1	18.8	19.9	20.3	19.3	19.5	20.9	18.9	17.0	16.9	16.3	16.2	17.4	16.9	18.1
Cincinnati, Ohio	5.2	5.7	5.0	4.8	5.2	4.8	4.9	6.0	7.3	8.8	9.3	9.7	10.1	9.5	10.2	10.4	9.5	9.0	8.2	7.8	6.7	6.4	6.1	5.4	7.3
Cleveland, Ohio	9.5	9.6	9.5	9.6	10.5	10.6	10.2	10.8	11.8	13.0	12.5	12.6	13.5	14.8	14.1	13.3	12.5	11.8	11.5	10.3	10.1	10.3	10.2	10.2	11.4
Colorado Spr'gs, Colo	9.5	9.4	8.1	6.5	6.3	7.3	8.3	8.9	8.0	6.8	7.1	8.8	10.2	12.5	14.8	16.7	16.1	16.0	15.3	15.0	12.7	10.6	9.5	9.5	10.6
Columbia, Mo	4.9	4.1	4.4	4.2	4.5	4.6	4.7	4.9	6.3	7.5	8.4	8.4	8.4	8.5	8.7	8.5	8.1	7.8	7.2	5.2	3.9	3.9	4.2	4.6	6.1
Columbus, Ohio	7.2	7.0	7.0	6.9	6.2	6.2	6.4	7.2	9.0	9.6	11.0	11.5	11.7	12.1	11.7	11.8	11.5	11.8	10.2	8.4	7.1	8.2	7.4	8.1	9.0
Concordia, Kans	6.7	7.4	7.3	7.1	6.5	6.1	6.5	7.0	9.0	10.5	11.3	11.3	11.0	10.9	10.8	10.5	10.3	10.0	9.7	8.6	6.9	6.9	6.5	6.8	8.6
Corpus Christi, Tex	14.2	13.1	11.8	11.6	11.4	10.8	10.2	10.2	11.8	13.3	13.5	14.0	14.5	15.3	15.7	16.5	17.0	17.4	17.6	16.7	16.6	17.2	16.6	15.5	14.3
Davenport, Iowa	6.4	6.3	6.4	6.1	6.1	7.0	7.0	7.9	9.2	10.6	10.6	11.3	11.3	11.9	13.0	13.7	13.1	12.9	11.9	9.4	7.2	7.1	6.8	6.1	9.1
Denver, Colo	7.3	7.0	8.5	7.7	7.2	7.1	6.7	6.8	7.0	7.3	7.4	8.0	9.5	10.1	10.4	11.0	12.1	12.3	11.4	9.4	10.1	9.4	9.0	9.1	8.9
Des Moines, Iowa	6.1	6.3	5.8	6.5	5.8	5.7	5.5	6.0	8.1	10.2	11.2	11.8	13.2	12.9	13.4	13.4	13.6	13.0	12.0	9.9	7.4	6.5	6.2	6.2	9.0
Detroit, Mich	9.1	8.8	8.9	8.7	8.2	8.7	9.0	9.6	9.9	10.9	11.8	12.5	13.0	13.8	13.5	13.1	13.2	13.0	11.9	10.9	10.3	9.6	9.8	10.0	10.8
Dodge City, Kans	12.5	11.6	10.8	10.0	9.9	9.1	9.4	10.6	12.6	15.2	15.9	15.7	14.9	14.5	14.8	14.7	15.0	15.3	15.6	15.2	13.1	13.1	13.3	13.5	13.2
Dubuque, Iowa	4.9	4.9	4.4	4.5	4.5	4.5	5.0	6.4	7.4	8.1	8.9	8.7	8.7	9.4	9.6	9.9	9.6	9.3	7.9	6.2	4.8	4.8	4.6	4.7	6.7
Duluth, Minn	6.1	6.5	6.7	7.5	6.9	7.0	7.0	7.6	7.8	8.0	8.9	9.3	9.3	10.1	10.2	9.9	9.6	9.5	8.7	7.7	6.3	5.7	6.2	6.4	7.9
Eastport, Me	6.9	7.1	7.1	6.9	7.3	8.8	8.7	9.1	10.2	10.9	11.6	12.2	11.0	11.3	11.3	10.6	10.3	9.8	9.2	8.5	7.9	7.6	7.1	7.1	9.1
El Paso, Tex	8.1	9.0	9.4	8.6	8.5	8.3	8.3	7.7	8.1	8.4	8.9	9.9	10.3	11.4	11.5	11.9	12.0	12.6	12.6	12.3	11.2	8.4	8.3	7.8	9.7
Erie, Pa	9.0	8.9	8.9	8.8	8.3	9.0	8.9	9.4	10.1	10.6	11.3	11.5	12.1	11.5	12.3	12.2	11.5	11.8	9.6	8.1	8.0	7.9	8.8	9.0	9.9
Eureka, Cal	6.6	6.2	6.1	5.7	5.7	5.0	4.9	4.4	3.6	4.4	5.1	6.2	8.3	9.7	10.4	11.6	12.2	11.5	11.4	10.7	9.3	7.9	6.5	6.1	7.5
Fort Canby, Wash	10.2	10.4	10.4	9.3	9.6	9.2	9.2	8.7	8.2	8.4	8.9	9.0	10.3	11.6	12.8	12.3	12.1	12.2	11.3	11.4	10.7	10.0	9.4	9.3	10.2
Fort Smith, Ark	3.9	4.7	5.2	5.3	4.7	4.5	4.4	4.7	5.6	6.5	7.3	8.2	8.4	9.5	9.5	9.5	8.5	8.3	6.8	5.5	4.4	4.4	4.6	4.1	6.2
Fresno, Cal	10.0	9.8	9.3	8.7	7.6	7.2	6.3	5.1	4.8	5.3	5.2	5.6	5.5	5.5	5.5	6.0	5.8	6.2	7.2	8.1	9.2	9.2	9.5	10.0	7.2
Galveston, Tex	11.3	11.6	11.3	10.8	10.5	9.8	9.9	10.1	11.1	11.2	11.7	11.8	12.2	12.0	12.7	12.7	12.6	12.4	12.2	11.5	11.2	11.6	11.4	10.5	11.4
Grand Haven, Mich	10.1	10.1	10.4	10.4	10.1	10.3	9.7	10.1	10.1	10.5	11.3	11.5	11.8	12.5	12.4	12.2	11.4	11.1	10.6	9.5	9.3	9.1	9.6	10.0	10.6
Green Bay, Wis	9.0	9.3	9.6	10.1	10.3	10.4	10.3	11.9	12.9	13.3	13.2	13.1	13.9	13.7	14.1	13.7	14.5	13.7	11.9	11.2	11.9	11.2	10.9	10.5	11.9
Hannibal, Mo	7.7	7.0	6.5	7.0	6.7	5.5	5.7	6.9	8.8	10.6	11.2	11.1	11.7	11.3	11.6	11.5	11.9	11.7	10.8	8.6	6.8	6.5	6.8	6.9	8.8
Harrisburg, Pa	5.9	5.8	5.9	5.8	5.3	5.0	5.4	6.5	7.3	7.6	8.4	8.8	9.5	9.8	10.2	10.0	9.7	8.5	7.5	7.0	7.1	6.9	7.5	6.4	7.4
Hatteras, N. C	11.8	11.6	11.0	10.9	11.4	11.2	12.1	11.9	11.9	12.3	12.7	12.9	12.9	14.0	14.7	14.1	13.8	12.7	12.7	13.1	12.2	11.5	11.6	12.5	12.4
Havre, Mont	7.5	7.5	7.1	6.1	7.0	7.9	7.3	7.9	9.6	10.8	11.9	12.6	13.5	13.0	13.7	13.2	13.1	12.6	12.8	12.1	10.9	8.0	8.1	7.2	10.1
Helena, Mont	8.7	8.8	9.3	8.4	7.9	7.1	7.7	7.5	5.4	5.5	6.7	7.4	8.3	9.4	10.4	11.5	12.3	12.3	11.6	11.3	10.0	8.4	8.2	8.4	8.9
Huron, S. Dak	12.4	11.7	10.8	11.0	11.2	11.2	11.5	12.7	14.5	16.0	16.8	17.9	18.8	19.2	19.1	18.5	18.1	17.5	16.1	13.8	11.4	11.1	11.5	12.6	14.4
Idaho Falls, Idaho	8.3	7.8	8.3	8.6	8.5	7.7	6.6	7.2	7.8	9.4	9.9	9.6	9.8	9.6	11.3	11.8	12.3	13.2	13.4	12.8	11.6	9.5	7.9	8.2	9.6
Indianapolis, Ind	5.0	4.3	4.6	4.5	4.7	4.9	4.9	5.6	6.4	7.2	7.8	8.1	8.8	8.7	8.8	8.9	8.2	7.6	7.4	6.1	6.2	5.7	5.5	5.0	6.5
Jacksonville, Fla	7.1	6.1	6.2	6.0	6.8	5.9	5.7	6.0	7.0	7.5	7.8	7.7	8.5	8.9	10.2	10.6	11.4	11.4	10.0	8.2	6.9	7.0	7.7	7.7	7.8
Jupiter, Fla	8.6	8.0	7.6	7.3	7.6	7.0	6.8	7.1	8.7	9.3	10.5	10.8	12.1	12.8	12.8	11.8	11.5	11.8	10.7	10.4	10.0	9.4	9.2	8.8	9.6
Kansas City, Mo	7.0	6.6	6.5	7.1	7.5	7.6	8.3	8.8	9.5	10.5	11.4	11.7	12.4	11.7	12.0	11.9	11.6	10.8	10.4	9.1	7.4	6.6	6.6	7.1	9.2
Keokuk, Iowa	6.3	6.3	5.9	5.7	5.2	5.5	5.3	6.2	8.2	8.8	9.1	10.1	10.2	10.4	10.0	10.4	10.5	10.4	10.1	8.0	6.3	5.4	5.9	5.7	7.7
Key West, Fla	7.7	7.9	7.6	7.8	7.0	7.4	6.7	7.8	8.9	9.2	9.5	9.5	9.0	8.8	9.0	8.9	9.5	9.1	9.7	9.2	8.8	8.5	8.1	7.9	8.5
Kittyhawk, N. C	11.0	11.2	10.7	11.0	11.9	12.3	12.5	13.2	13.1	12.8	12.3	12.5	13.4	12.9	13.9	14.3	15.5	15.6	14.2	14.2	14.7	13.9	14.7	12.7	13.1
Knoxville, Tenn	2.8	3.2	3.2	3.1	3.3	3.0	2.8	4.2	5.1	5.9	6.5	7.1	8.0	7.2	7.7	7.5	7.0	7.0	6.7	4.8	4.2	4.2	3.9	3.1	5.1
La Crosse, Wis	6.6	6.2	7.0	6.6	7.4	7.6	7.6	7.7	8.6	9.3	10.1	10.7	11.6	11.8	12.2	12.1	11.5	10.9	11.3	10.1	7.6	8.4	7.5	5.8	9.0
Lander, Wyo	6.3	5.4	4.1	4.3	4.1	4.1	3.3	3.5	3.8	4.7	5.6	5.2	6.2	7.5	8.6	9.6	10.2	10.1	10.7	9.8	8.9	6.8	6.5	6.4	6.5
Lexington, Ky	9.7	10.1	10.4	10.2	10.2	9.6	8.6	8.3	9.7	10.4	10.7	11.6	12.0	12.2	13.2	12.3	12.0	11.5	10.5	9.0	8.8	9.7	10.5	9.9	10.5
Little Rock, Ark	6.0	5.7	5.3	5.1	5.2	5.5	5.5	6.4	7.5	8.0	8.3	8.8	10.0	10.2	10.6	10.3	10.1	9.6	8.9	7.1	6.4	7.2	6.2	5.6	7.5
Los Angeles, Cal	2.2	2.3	2.3	2.7	2.4	2.6	2.6	2.4	2.5	2.5	2.6	3.0	3.2	3.6	5.3	6.6	7.7	8.1	7.9	7.4	7.2	5.7	3.9	2.7	4.1
Louisville, Ky	6.2	6.7	6.4	5.8	5.5	5.6	5.5	6.4	7.3	8.4	8.9	9.6	9.8	9.9	10.2	10.3	10.4	9.6	8.6	7.6	6.7	6.5	6.3	6.4	7.7
Lynchburg, Va	2.2	1.8	1.7	1.7	1.6	2.1	2.5	3.3	4.2	5.2	5.9	5.8	6.2	6.6	6.3	6.4	6.2	5.8	5.0	4.6	3.8	3.7	3.0	2.3	4.1
Marquette, Mich	9.9	11.3	12.1	12.5	12.5	12.3	11.7	11.6	12.8	13.5	13.6	13.7	13.3	13.7	13.2	12.8	12.9	12.5	11.8	10.8	9.4	9.3	9.7	10.1	12.0
Memphis, Tenn	6.0	5.7	5.7	5.1	5.6	5.4	5.6	5.9	6.4	8.0	8.1	8.7	9.3	8.7	8.8	8.6	9.1	8.5	7.3	6.8	6.6	6.5	6.4	6.5	7.1
Meridian, Miss	3.3	3.6	3.5	3.3	2.7	3.1	3.2	4.3	5.6	6.3	6.6	7.5	7.7	7.6	8.6	9.1	8.6	7.6	6.4	5.0	3.8	3.8	4.4	4.1	5.4
Miles City, Mont	7.1	6.8	6.3	5.7	5.8	5.9	5.8	6.0	7.3	8.3	9.5	9.5	10.4	10.5	10.9	11.3	11.2	10.7	10.9	10.5	8.9	7.6	8.8	8.2	8.5
Milwaukee, Wis	10.1	10.2	10.5	10.3	10.0	10.0	10.0	10.7	11.3	12.4	13.0	13.2	13.7	14.4	14.1	14.0	13.7	13.6	12.2	11.1	10.3	10.0	10.0	9.6	11.6
Mobile, Ala	5.2	5.1	4.2	4.5	4.0	4.1	4.2	4.7	5.5	6.6	7.9	9.0	9.6	10.5	12.3	13.1	12.2	10.7	8.5	7.6	5.9	6.4	6.4	6.3	7.3
Montgomery, Ala	4.9	4.2	3.9	3.9	4.3	4.4	4.6	4.9	6.1	7.0	7.4	6.9	6.9	7.4	7.8	8.8	9.2	8.7	7.1	5.2	4.5	5.1	5.0	5.2	6.0
Moorhead, Minn	9.9	10.5	9.9	10.4	10.0	9.2	10.2	11.4	11.7	12.7	13.8	14.5	15.0	15.0	15.4	14.7	14.5	13.3	12.5	11.8	9.6	9.0	9.5	9.8	11.9
Nantucket, Mass	9.9	10.1	10.7	10.8	10.8	11.1	12.1	12.5	13.5	13.3	12.9	13.2	12.9	12.4	12.5	12.2	12.1	10.5	9.5	8.4	9.0	9.0	8.7	9.2	11.1
Nashville, Tenn	3.9	3.6	3.7	3.5	3.5	3.3	3.4	4.6	5.4	6.1	6.3	6.8	7.1	7.5	7.4	7.6	7.7	7.3	5.9	4.8	4.5	5.0	4.2	3.9	5.3
New Haven, Conn	6.7	6.5	6.0	6.4	6.1	6.0	6.7	8.2	8.9	9.2	9.7	10.2	11.3	12.2	11.5	10.5	9.9	9.3	8.2	7.2	7.0	7.0	7.2	7.0	8.3
New London, Conn	5.5	5.9	5.7	5.6	5.6	5.6	6.2	7.4	8.6	9.6	10.5	10.8	11.5	12.9	11.9	12.1	10.9	8.8	7.5	6.9	6.1	6.0	6.1	5.6	8.1
New Orleans, La	5.2	5.0	4.2	4.1	4.1	4.1	3.9	4.9	5.9	7.4	8.6	8.6	8.8	9.2	9.1	8.9	8.7	9.0	8.8	7.7	7.0	6.5	6.4	5.7	6.7
New York, N. Y	9.0	8.7	8.7	9.3	8.4	8.3	8.0	9.0	9.2	10.0	10.9	10.4	10.4	11.3	11.9	12.2	12.3	11.3	10.4	10.5	10.1	10.4	9.4	9.1	10.0
Norfolk, Va	7.7	7.3	6.7	7.2	7.3	6.7	7.4	8.4	9.0	9.2	9.3	8.7	9.4	9.5	9.8	10.5	10.9	10.1	8.6	7.6	7.8	7.6	8.1	8.5	8.5
Northfield, Vt	6.8	6.9	6.7	6.5	6.7	6.7	7.5	9.9	11.8	11.9	12.3	12.8	13.2	13.1	13.3	12.6	13.2	11.3	9.7	7.8	7.9	7.1	7.8	6.9	9.6
North Platte, Nebr	12.5	11.5	11.5	10.2	9.3	8.9	8.0	8.5	10.5	12.8	14.1	13.8	13.0	13.8	14.4	14.6	14.0	14.2	13.6	13.0	11.9	12.9	12.6	12.5	12.2
Oklahoma, Okla	7.5	7.3	6.5	6.2	6.7	7.3	6.6	7.0	8.7	10.3	11.1	11.7	11.0	11.5	11.1	11.3	10.7	10.3	10.7	8.4	6.6	7.0	7.3	7.6	8.8
Omaha, Nebr	6.5	7.1	7.7	7.9	8.7	8.1	7.1	7.9	9.7	10.7	11.4	11.9	12.7	12.9	12.8	13.1	12.6	12.5	12.2	11.0	8.6	7.2	6.2	6.4	9.7

TABLE VII.—*Average wind movement, etc.*—Continued.

Stations.	1 a. m.	2 a. m.	3 a. m.	4 a. m.	5 a. m.	6 a. m.	7 a. m.	8 a. m.	9 a. m.	10 a. m.	11 a. m.	Noon.	1 p. m.	2 p. m.	3 p. m.	4 p. m.	5 p. m.	6 p. m.	7 p. m.	8 p. m.	9 p. m.	10 p. m.	11 p. m.	Midnight.	Mean.
Oswego, N. Y	8.3	8.8	8.5	8.9	9.3	9.2	9.4	10.7	10.9	10.9	11.1	10.8	10.8	11.0	10.5	10.0	9.3	8.3	7.6	8.1	8.4	8.7	8.9	8.7	9.5
Palestine, Tex	5.3	5.1	4.8	5.2	4.8	4.6	4.5	5.6	6.5	7.6	7.8	7.2	7.5	7.4	8.0	7.8	7.4	7.1	7.1	4.9	4.5	5.1	6.1	5.9	6.2
Parkersburg, W. Va	3.6	3.3	3.3	3.3	3.8	4.0	4.0	4.2	5.1	6.3	6.4	7.3	7.3	8.0	7.8	8.1	7.2	7.2	5.5	4.2	3.4	3.3	3.4	3.1	5.1
Pensacola, Fla	7.3	7.1	6.7	6.7	6.5	6.5	6.2	6.5	7.0	8.3	10.2	11.0	11.9	13.4	13.6	13.7	13.4	12.9	11.3	9.5	7.7	7.1	7.1	7.6	9.1
Philadelphia, Pa	9.7	10.0	9.4	9.3	8.9	8.5	8.8	9.6	10.0	10.6	11.1	10.9	11.9	12.3	12.0	12.7	12.7	12.2	10.9	10.9	10.8	10.5	10.2	9.6	10.6
Pierre, S. Dak	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Pikes Peak, Colo	23.9	25.2	26.8	25.3	26.4	26.1	25.5	26.2	23.8	20.5	18.7	16.1	16.2	16.0	17.8	18.2	18.9	18.2	18.5	18.9	19.3	20.8	22.5	23.2	21.4
Pittsburg, Pa	4.9	4.7	4.8	4.3	4.3	4.5	4.5	4.6	5.6	6.7	8.1	7.8	8.1	8.5	8.8	8.7	8.4	7.8	7.3	5.7	5.2	4.6	4.4	4.3	6.1
Port Angeles, Wash	5.1	4.9	4.6	4.2	4.4	4.7	4.6	4.9	4.3	4.0	4.5	6.3	7.5	7.8	7.5	7.1	7.2	7.7	8.7	8.8	8.1	7.4	5.7	5.0	6.0
Port Huron, Mich	11.2	10.9	10.4	11.2	10.3	10.6	11.1	12.2	13.2	14.8	15.3	15.9	16.0	15.8	15.6	15.6	15.3	14.2	13.3	12.1	10.7	11.3	11.6	12.0	12.9
Portland, Me	5.5	6.1	6.0	5.8	5.8	6.5	6.9	7.2	8.2	8.6	9.7	10.9	11.0	11.7	11.9	11.4	11.2	10.9	9.3	8.3	7.6	7.1	6.5	6.1	8.3
Portland, Oreg	10.1	9.4	9.1	8.3	7.8	7.5	7.8	7.0	7.2	7.6	7.9	8.1	7.8	8.8	9.3	9.2	9.5	10.7	11.0	10.9	11.6	11.4	11.4	10.7	9.2
Pueblo, Colo	7.6	8.6	7.8	7.2	7.2	5.6	5.4	4.9	5.5	6.2	6.6	7.3	9.0	9.9	12.2	13.7	13.0	13.0	14.5	14.5	11.8	12.0	10.4	9.3	9.3
Raleigh, N. C	4.4	4.3	4.4	4.0	4.2	4.4	4.7	5.5	5.6	6.1	6.0	6.3	6.3	5.8	6.0	6.2	6.1	5.5	5.7	4.8	4.8	5.3	5.1	5.2	5.3
Rapid City, S. Dak	7.9	8.9	9.5	9.7	9.5	9.3	8.9	8.1	8.6	9.7	11.3	13.0	12.9	14.3	14.3	14.5	14.6	15.0	13.4	13.2	10.4	8.2	7.7	8.2	10.9
Red Bluff, Cal	6.5	7.4	7.3	7.0	7.1	6.6	6.1	6.4	6.3	7.1	8.5	9.2	8.9	9.3	9.3	9.7	9.4	9.1	9.9	9.6	8.6	8.1	7.4	6.4	8.0
Rochester, N. Y	4.7	5.1	5.6	5.7	6.1	6.1	5.8	7.0	7.4	7.8	8.0	8.5	10.2	9.8	10.4	10.6	9.9	8.7	7.2	6.1	5.9	5.7	5.2	5.0	7.2
Roseburg, Oreg	2.5	2.2	1.9	1.7	2.0	1.6	1.5	1.5	1.7	2.0	2.5	3.3	3.7	4.0	4.8	5.2	6.1	6.7	7.1	7.3	7.3	6.1	5.0	3.7	3.8
Sacramento, Cal	8.4	8.0	8.4	9.0	9.2	9.1	8.7	9.0	8.5	9.0	9.4	9.8	10.4	10.5	11.3	11.8	12.9	12.3	11.9	10.9	10.3	9.4	8.9	8.3	9.8
St. Louis, Mo	9.2	9.4	9.0	9.2	8.5	8.3	8.3	8.6	9.5	9.9	11.8	12.7	13.1	13.5	13.6	13.6	13.5	13.6	12.4	11.2	10.2	9.9	9.4	8.9	10.7
St. Paul, Minn	7.3	6.8	6.4	5.8	5.6	6.1	7.0	7.3	8.3	9.5	11.0	12.1	12.4	12.3	12.0	12.2	12.5	12.3	11.6	9.1	7.4	6.6	7.0	7.6	9.0
St. Vincent, Minn	7.8	7.7	8.1	8.0	8.1	8.1	8.4	9.4	10.9	12.4	13.4	13.3	12.5	13.0	13.2	12.5	11.9	12.3	11.4	10.6	8.7	7.4	8.0	8.3	10.2
Salt Lake City, Utah	4.8	5.0	5.7	5.5	5.3	5.4	5.3	5.2	5.1	5.2	6.7	8.3	10.0	10.5	11.4	11.5	11.3	10.7	9.5	9.2	6.4	5.2	5.2	5.4	7.2
San Antonio, Tex	7.6	6.9	5.8	6.0	5.3	5.2	5.0	5.1	6.7	8.3	9.2	9.8	9.8	9.5	9.2	9.5	9.2	9.8	9.7	10.2	10.8	10.1	9.4	8.2	8.2
San Diego, Cal	3.4	3.4	3.5	3.3	3.8	3.6	3.4	3.5	3.0	3.5	3.6	5.1	7.5	8.8	9.3	9.5	9.5	9.5	8.5	8.3	7.4	6.3	5.2	4.0	5.7
Sandusky, Ohio	9.1	8.7	8.3	8.5	8.6	8.5	8.8	8.9	9.0	9.1	9.5	9.8	10.1	10.9	10.9	11.7	10.8	10.2	10.6	9.5	9.2	8.9	9.4	8.7	9.5
San Francisco, Cal	12.0	10.6	10.1	9.7	9.2	8.7	7.5	7.4	7.4	7.8	9.2	9.4	9.4	11.9	13.7	15.5	18.3	19.2	19.5	20.2	20.1	17.5	15.5	14.1	12.7
Santa Fe, N. Mex	7.4	7.3	6.7	6.2	5.6	4.9	5.0	4.4	4.5	6.8	8.6	9.1	9.4	10.7	11.8	12.0	11.4	11.3	11.7	11.2	9.5	7.3	7.5	7.8	8.2
Sault Ste. Marie, Mich.	7.1	7.0	7.7	7.7	8.2	7.5	8.1	9.4	10.3	11.0	11.7	12.2	13.0	12.6	12.8	11.7	11.2	11.4	10.7	9.5	8.3	7.7	7.3	7.1	9.6
Savannah, Ga	7.1	6.1	5.5	5.1	5.3	5.3	5.5	6.7	7.4	7.2	8.0	8.4	8.8	10.5	11.5	11.6	11.8	11.4	9.9	7.9	8.1	7.2	7.3	7.5	8.0
Seattle, Wash	4.7	4.8	4.5	4.5	4.5	5.2	5.0	5.5	5.4	5.4	5.6	6.0	6.5	6.9	7.4	7.7	7.7	8.4	8.5	8.6	8.5	7.3	6.2	5.0	6.2
Shreveport, La	6.4	5.5	5.9	5.7	4.9	4.9	5.2	5.5	7.0	7.5	7.3	7.0	7.6	7.9	8.2	8.1	8.0	7.7	7.5	6.4	5.7	5.9	6.2	6.1	6.6
Sioux City, Iowa	10.3	9.9	9.9	9.7	10.2	10.6	10.3	11.5	12.8	15.2	15.9	16.4	16.0	16.9	16.4	17.0	17.0	16.5	15.1	13.9	11.5	10.6	10.8	11.1	13.1
Southport, N. C	8.5	8.2	7.6	7.8	8.0	7.6	7.8	8.7	9.5	10.7	11.7	12.9	14.0	15.2	15.3	16.0	15.8	15.3	14.2	13.2	12.4	11.2	9.2	8.8	11.2
Spokane, Wash	6.3	6.4	6.0	5.7	6.0	6.1	5.8	5.6	6.2	7.3	7.4	7.2	8.2	7.9	8.3	8.0	8.3	8.4	9.0	8.7	8.1	7.2	5.9	5.9	7.1
Springfield, Ill	7.1	6.9	6.1	6.5	6.7	6.8	6.4	7.3	8.6	9.7	10.5	10.6	10.5	11.3	11.6	11.5	11.1	10.7	9.6	8.1	6.6	6.9	6.7	7.0	8.5
Springfield, Mo	7.1	7.3	7.2	8.2	7.6	7.6	7.4	7.9	8.8	9.9	10.3	10.4	10.9	11.4	10.9	10.2	10.4	10.2	9.4	7.9	6.6	6.8	6.5	6.7	8.6
Tampa, Fla	4.1	4.2	4.3	4.1	4.1	4.2	3.9	4.7	5.7	6.1	6.7	7.3	7.8	7.6	8.4	9.5	10.1	10.3	9.4	7.2	5.2	4.6	4.7	4.4	6.2
Tatoosh Island, Wash	11.2	11.4	12.1	13.2	13.2	14.1	13.1	13.2	11.8	11.2	11.6	11.3	12.0	12.4	13.1	13.7	13.5	14.0	12.4	12.0	12.9	12.2	11.7	11.3	12.4
Titusville, Fla	9.9	8.9	8.0	7.4	7.0	6.5	7.0	7.4	8.7	9.0	10.2	11.2	13.4	15.1	16.5	16.7	17.2	17.2	16.8	14.6	13.5	12.9	11.4	9.7	11.5
Toledo, Ohio	8.5	8.1	8.4	8.7	8.3	8.4	7.9	8.5	9.1	10.6	11.7	11.3	12.0	12.8	12.5	12.6	12.7	13.1	11.1	9.7	9.5	9.7	9.5	9.4	10.2
Tucson, Ariz	6.4	5.8	5.6	5.6	5.6	5.9	5.9	5.8	4.6	4.4	5.5	5.2	5.6	7.5	8.3	9.9	11.4	11.8	12.4	12.7	11.8	9.8	8.2	7.3	7.6
Valentine, Nebr	12.6	11.9	10.7	11.1	11.5	10.5	9.2	9.2	10.7	12.3	13.9	15.0	14.9	15.0	15.2	15.0	15.0	14.7	15.7	15.1	14.3	12.2	10.9	12.5	12.9
Vicksburg, Miss	6.6	6.5	6.2	6.1	5.5	5.9	6.0	5.7	5.6	5.7	6.7	7.0	8.1	8.3	9.2	8.5	8.8	8.2	7.9	6.7	5.5	5.5	5.9	6.3	6.8
Vineyard Haven, Mass	8.4	8.4	8.1	8.4	8.7	9.1	9.6	11.0	10.5	10.5	11.0	11.0	11.2	11.8	12.5	12.4	11.7	10.1	8.7	8.0	7.9	7.5	7.5	7.3	9.6
Walla Walla, Wash	6.2	6.9	6.0	6.0	6.0	5.8	6.0	6.1	5.5	5.5	6.8	6.9	6.7	6.7	6.8	7.4	7.3	7.3	7.2	7.0	7.1	6.2	5.4	5.7	6.4
Washington, D. C	4.2	4.2	4.2	4.3	4.5	4.4	4.6	6.0	7.8	7.9	8.3	8.7	8.8	8.9	9.2	9.7	8.7	7.5	6.8	6.1	5.3	5.7	5.1	5.0	6.5
Wichita, Kans	7.3	6.8	6.4	6.7	7.1	7.2	6.8	7.6	9.6	10.5	10.5	10.8	11.1	10.7	10.8	10.8	10.5	10.3	10.0	9.0	8.1	6.9	6.7	7.4	8.7
Williston, N. Dak	12.2	11.6	11.2	10.2	9.5	9.4	8.9	10.3	12.0	14.7	16.7	17.0	17.2	18.6	18.7	18.7	19.1	18.8	18.0	17.4	15.2	14.2	14.1	12.6	14.4
Wilmington, N. C	5.6	6.0	5.8	6.3	6.0	6.0	6.1	7.5	8.1	8.8	9.2	9.8	10.9	12.5	12.8	12.3	12.2	12.5	10.6	9.0	8.3	7.5	7.3	6.5	8.7
Winnemucca, Nev	9.5	9.0	9.0	9.8	9.2	10.0	10.3	10.2	10.7	11.1	12.6	12.7	12.5	11.8	11.5	11.2	11.3	11.7	11.6	11.4	10.0	9.3	10.1	10.8	10.7
Woods Holl, Mass	10.3	11.2	11.1	11.1	11.8	12.3	12.1	13.1	12.7	12.2	13.2	12.1	13.1	14.8	16.0	15.6	15.5	13.4	10.9	10.0	10.4	9.7	9.5	9.9	12.2
Yuma, Ariz	8.4	7.7	5.9	5.5	5.3	4.9	5.1	4.8	4.0	5.1	6.4	8.4	8.8	9.2	9.1	9.0	9.4	9.4	9.7	10.3	11.3	11.2	11.1	9.1	7.9

TABLE VIII.—*Prevailing and resultant winds from self-registers for May*, 1894.

Number.	Station.	Prevailing wind.		Total movement.		Resultant direction.			Resultant movement.		Azimuth of movement minus direction.	Ratio of resultant movement to total movement.
		Direction from.	Duration.	Monthly.	Hourly average.	Direction from.	Duration.	Average hourly velocity.	Direction from.	Amount.		
	(1)	(2)	(3) Hours.	(4) Miles.	(5) Miles.	(6)	(7) Hours.	(8) Miles.	(9)	(10) Miles.	(11) °	(12)
1	Eastport, Me	sw.	179	6,776	9.1	s. 8 w.	75	4.9	n. 65 e.	368	−123	0.054
2	Portland, Me	s.	141	6,209	8.3	s. 26 e.	73	8.6	s. 61 e.	625	− 35	0.101
4	Boston, Mass	e.	145	8,095	10.9	n. 24 w.	22	33.5	n. 15 w	738	+ 9	0.091
5	Nantucket, Mass	sw.	221	8,284	11.1	s. 51 w.	274	10.1	s. 30 w.	2,755	− 21	0.332
8	New Haven, Conn	se.	114	6,173	8.3	s. 83 e.	74	11.6	n. 75 e.	856	− 22	0.139
10	Albany, N. Y	s.	197	5,922	8.0	s. 12 w.	146	11.0	s. 3 e.	1,605	− 15	0.271
11	New York, N. Y	se.	147	7,409	10.0	s. 15 e.	55	3.7	s. 30 e.	205	− 15	0.028
13	Philadelphia, Pa	sw.	139	7,859	10.6	n. 22 w.	16	19.0	n. 74 e.	304	+ 90	0.039
15	Baltimore, Md	se.	131	5,880	7.9	s. 25 e.	33	12.8	s. 14 e.	423	+ 11	0.072
16	Washington, D. C	s.	196	4,836	6.5	s.	89	6.0	s. 13 w.	534	+ 13	0.110
17	Lynchburg, Va	sw.	163	3,033	4.1	s. 33 w.	221	3.9	s. 49 w.	855	+ 16	0.282
18	Norfolk, Va	se.	161	6,304	8.5	s. 4 e.	213	10.8	s. 4 w.	2,308	+ 8	0.366
24	Wilmington, N. C	sw.	307	6,436	8.7	s. 29 w.	336	10.2	s. 29 w.	3,427	0	0.532
26	Augusta, Ga	s.	146	3,940	5.3	s. 19 w.	202	6.5	s. 46 w.	1,316	+ 27	0.334
27	Savannah, Ga	s.	269	5,922	8.0	s. 8 w.	345	8.3	s. 11 w.	2,874	+ 3	0.485
28	Jacksonville, Fla	s.	174	5,840	7.8	s. 18 e.	267	8.9	s. 12 e.	2,367	+ 6	0.405
30	Key West, Fla	e.	223	6,300	8.5	n. 70 e.	295	10.4	n. 66 e.	380	− 4	0.489
33	Atlanta, Ga	nw.	181	6,477	8.7	s. 84 w.	236	10.9	n. 83 w.	2,580	+ 1	0.398
38	Vicksburg, Miss	sw.	143	5,034	6.8	s. 52 w.	93	7.3	s. 56 w.	676	+ 4	0.134
39	New Orleans, La	se.	169	5,011	6.7	s. 35 e.	188	4.6	s. 54 e.	860	− 19	0.172
42	Little Rock, Ark	s.	141	5,559	7.5	s. 22 e.	59	2.1	n. 81 w.	122	+121	0.022
44	Galveston, Tex	s.	297	8,500	11.4	s. 14 e.	438	10.9	s. 14 e.	4,775	0	0.562
48	Knoxville, Tenn	sw.	210	3,771	5.1	n. 82 w.	257	6.4	n. 89 w.	1,659	− 7	0.440
49	Memphis, Tenn	nw.	165	5,251	7.1	n. 74 w.	105	8.5	n. 72 w.	893	+ 2	0.170
50	Nashville, Tenn	nw.	142	3,944	5.3	n. 71 w.	124	8.6	n. 75 w.	1,068	− 4	0.271
52	Louisville, Ky	s.	202	5,722	7.7	s. 42 w.	247	8.0	s. 61 w.	1,971	+ 19	0.344
53	Indianapolis, Ind	nw.	214	4,812	6.5	s. 85 w.	186	7.8	n. 88 w.	1,448	+ 7	0.301
54	Cincinnati, Ohio	nw.	132	5,455	7.3	s. 47 w.	141	11.9	s. 76 w.	1,679	+ 29	0.308
55	Columbus, Ohio	sw.	139	6,674	9.0	s. 61 w.	173	15.0	s. 81 w.	2,592	+ 20	0.388
56	Pittsburg, Pa	nw.	202	4,544	6.1	n. 70 w.	216	7.4	n. 84 w.	1,589	− 14	0.350
58	Buffalo, N. Y	sw.	182	7,215	9.7	s. 71 w.	111	20.7	s. 81 w.	2,298	+ 10	0.318
60	Rochester, N. Y	sw.	223	5,347	7.2	s. 72 w.	127	13.4	s. 63 w.	1,703	− 9	0.318
62	Cleveland, Ohio	se.	175	8,458	11.4	s. 30 w.	100	20.1	s. 57 w.	2,014	+ 27	0.238
64	Toledo, Ohio	w.	142	7,562	10.2	n. 64 w.	147	11.5	n. 66 w.	1,697	− 2	0.224
65	Detroit, Mich	sw.	159	8,002	10.8	n. 4 e.	43	25.1	n. 78 w.	1,078	− 82	0.135
66	Alpena, Mich	se.	143	7,914	10.6	n. 43 e.	110	10.0	n. 10 e.	1,096	− 33	0.138
67	Grand Haven, Mich	sw.	168	7,880	10.6	s. 87 w.	90	11.8	s. 76 w.	1,063	− 11	0.135
68	Marquette, Mich	nw.	217	8,900	12.0	n. 30 w.	279	10.5	n. 47 w.	2,928	− 17	0.329
70	Sault Ste. Marie, Mich	se.	209	7,167	9.6	n. 14 w.	46	13.3	n. 14 e.	613	+ 28	0.086
71	Chicago, Ill	ne.	168	13,450	18.1	s. 65 e.	33	13.8	n. 30 e.	456	− 85	0.034
72	Milwaukee, Wis	ne.	135	8,631	11.6	n. 41 e.	107	16.1	n. 16 e.	1,723	− 25	0.200
74	Duluth, Minn	ne.	279	5,858	7.9	n. 41 e.	289	8.2	n. 22 e.	2,370	− 19	0.404
75	Moorhead, Minn	n.	168	8,818	11.9	n. 32 e.	171	11.0	n. 29 e.	1,882	− 3	0.213
77	Bismarck, N. Dak	ne.	187	10,400	14.0	n. 61 e.	236	14.9	n. 46 e.	3,512	− 15	0.338
79	Saint Paul, Minn	nw.	178	6,696	9.0	n. 40 w.	66	7.1	n. 60 w.	469	− 20	0.070
81	Davenport, Iowa	sw.	201	6,790	9.1	s. 67 w.	156	11.0	s. 80 w.	1,720	+ 13	0.253
82	Des Moines, Iowa	sw.	146	6,709	9.0	n. 54 w.	96	12.1	w.	1,164	− 36	0.174
88	Saint Louis, Mo	s.	140	7,981	10.7	s. 40 w.	73	18.3	s. 64 w.	1,335	+ 24	0.167
90	Kansas City, Mo	s.	181	6,821	9.2	s. 77 e.	124	4.5	s. 59 e.	562	+ 18	0.082
92	Omaha, Nebr	n.	180	7,220	9.7	n. 33 w.	67	9.4	s. 39 w.	632	−108	0.088
96	Huron, S. Dak	se.	211	10,705	14.4	n. 87 e.	86	13.1	s. 17 e.	1,124	+ 76	0.105
98	Havre, Mont	e.	159	7,489	10.1	n. 34 w.	22	41.4	n. 81 w.	912	− 47	0.122
100	Helena, Mont	sw.	294	6,586	8.9	s. 79 w.	306	10.2	s. 76 w.	3,127	− 3	0.475
106	Colorado Springs, Colo	n.	250	7,876	10.6	n. 23 e.	133	7.3	n. 8 w.	968	− 31	0.123
107	Denver, Colo	nw.	165	6,606	8.9	n. 70 w.	120	10.8	n. 72 w.	1,301	− 2	0.197
108	Pikes Peak, Colo	w.	230	15,932	21.4	s. 72 w.	330	29.2	s. 73 w.	9,620	+ 1	0.604
111	Dodge City, Kans	se.	266	9,805	13.2	s. 76 e.	321	14.0	s. 62 e.	4,500	+ 14	0.459
114	Abilene, Tex	se.	282	8,382	11.3	s. 35 e.	274	12.0	s. 32 e.	3,279	+ 3	0.391
116	El Paso, Tex	nw.	243	7,233	9.7	n. 66 w.	169	16.6	n. 68 w.	2,797	− 2	0.387
117	Santa Fe, N. Mex	sw.	218	6,132	8.2	w.	195	11.4	s. 19 w.	2,102	− 71	0.343
119	Yuma, Ariz	w.	181	5,853	7.9	s. 64 w.	277	9.4	s. 72 w.	2,600	+ 8	0.444
122	Salt Lake City, Utah	se.	188	5,387	7.2	s. 21 e.	58	12.1	s. 27 w.	703	+ 48	0.130
125	Spokane, Wash	sw.	218	5,261	7.1	s. 87 e.	256	11.6	s. 16 w.	2,960	+103	0.563
130	Seattle, Wash											
132	Portland, Oregon	nw.	294	6,822	9.2	n. 41 w.	381	10.0	n. 45 w.	3,818	− 4	0.560
133	Roseburg, Oregon	n.	348	2,833	3.8	n. 14 e.	364	4.9	n. 9 e.	1,786	− 5	0.630
137	San Francisco, Cal	sw.	534	9,425	12.7	s. 39 w.	577	14.0	s. 39 w.	8,097	0	0.859
140	San Diego, Cal	w.	230	4,228	5.7	w.	493	7.0	s. 83 w.	2,842	− 7	0.672

TABLE IX.—*Resultant winds from observations at 8 a. m. and 8 p. m., daily, during May, 1894.*

Number.	Station.	Component direction from—				Resultant.	
		N.	S.	E.	W.	Direction from—	Duration.
	New England.	*Hours.*	*Hours.*	*Hours.*	*Hours.*	°	*Hours.*
1	Eastport, Me	18	22	17	20	s. 37 w.	5
2	Portland, Me	13	23	23	17	s. 31 e.	12
3	Northfield, Vt	19	35	7	8	s. 3 w.	16
4	Boston, Mass	17	18	22	23	s. 45 w.	1
5	Nantucket, Mass	11	25	10	31	s. 56 w.	25
6	Woods Holl, Mass	3	14	8	14	s. 29 w.	12
7	Block Island, R. I	12	21	19	27	s. 42 w.	12
8	New Haven, Conn	22	22	21	14	.. .. e.	7
9	New London, Conn	16	28	16	18	s. 9 w.	12
	Middle Atlantic States.						
10	Albany, N. Y	14	27	13	18	s. 21 w.	14
11	New York, N. Y	15	24	24	19	s. 29 e.	10
12	Harrisburg, Pa	15	18	22	19	s. 45 e.	4
13	Philadelphia, Pa	16	17	20	22	s. 63 w.	2
14	Atlantic City, N. J	11	21	22	20	s. 11 e.	10
15	Baltimore, Md	19	18	21	17	n. 76 e.	4
16	Washington, D. C	19	22	21	17	s. 53 e.	5
17	Lynchburg, Va	12	26	14	26	s. 41 w.	18
18	Norfolk, Va	12	29	20	17	s. 10 e.	17
	South Atlantic States.						
19	Charlotte, N. C	8	33	14	18	s. 9 w.	25
20	Hatteras, N. C	8	27	14	26	s. 32 w.	22
21	Kittyhawk, N. C	11	25	19	21	s. 8 w.	14
22	Raleigh, N. C	10	34	8	22	s. 30 w.	28
23	Southport, N. C	4	26	14	31	s. 35 w.	29
24	Wilmington, N. C	12	28	13	30	s. 47 w.	23
25	Charleston, S. C	6	32	13	26	s. 27 w.	29
26	Augusta, Ga	12	25	15	22	s. 28 w.	15
27	Savannah, Ga	11	34	11	17	s. 15 w.	24
28	Jacksonville, Fla	12	26	26	13	s. 43 e.	19
	Florida Peninsula.						
29	Jupiter, Fla	14	17	29	10	s. 81 e.	19
30	Key West, Fla	22	8	34	9	n. 61 e.	29
31	Tampa, Fla	24	6	22	23	n. 3 w.	18
32	Titusville, Fla	7	14	28	20	s. 49 e.	11
	Eastern Gulf States.						
33	Atlanta, Ga	22	14	12	31	n. 67 w.	21
34	Pensacola, Fla	17	26	13	27	s. 57 w.	17
35	Mobile, Ala	26	20	6	18	n. 63 w.	13
36	Montgomery, Ala	17	18	14	23	s. 84 w.	9
37	Meridian, Miss	17	25	13	19	s. 37 w.	10
38	Vicksburg, Miss	16	22	19	19	s.	6
39	New Orleans, La	12	29	24	14	s. 30 e.	20
	Western Gulf States.						
40	Shreveport, La	16	29	15	14	s. 4 e.	13
41	Fort Smith, Ark	12	14	31	15	s. 83 e.	16
42	Little Rock, Ark	18	27	15	15	s.	9
43	Corpus Christi, Tex	6	37	41	2	s. 51 e.	50
44	Galveston, Tex	9	42	15	9	s. 10 e.	34
45	Palestine, Tex	17	24	11	23	s. 60 w.	14
46	San Antonio, Tex	.....	.....	.....	.....	.....	.....
	Ohio Valley and Tennessee.						
47	Chattanooga, Tenn	15	21	14	27	s. 65 w.	14
48	Knoxville, Tenn	19	14	16	27	n. 66 w.	12
49	Memphis, Tenn	21	19	15	23	n. 76 w.	8
50	Nashville, Tenn	24	17	14	23	n. 52 w.	11
51	Lexington, Ky	14	28	7	37	s. 65 w.	33
52	Louisville, Ky	15	29	9	19	s. 36 w.	17
53	Indianapolis, Ind	19	21	13	27	s. 82 w.	14
54	Cincinnati, Ohio	16	22	14	23	s. 56 w.	11
55	Columbus, Ohio	16	22	13	25	s. 63 w.	13
56	Pittsburg, Pa	28	12	11	26	n. 43 w.	22
57	Parkersburg, W. Va	18	24	15	19	s. 34 w.	7
	Lower Lake Region.						
58	Buffalo, N. Y	16	27	18	26	s. 36 w.	14
59	Oswego, N. Y	16	23	12	22	s. 55 w.	12
60	Rochester, N. Y	15	18	16	28	s. 76 w.	12
61	Erie, Pa	14	21	16	25	s. 52 w.	11
62	Cleveland, Ohio	13	28	14	18	s. 15 w.	16
63	Sandusky, Ohio	13	21	18	25	s. 41 w.	11
64	Toledo, Ohio	20	14	13	26	n. 65 w.	14
65	Detroit, Mich	18	15	24	19	n. 59 e.	6
	Upper Lake Region.						
66	Alpena, Mich	22	15	23	16	n. 45 e.	10
67	Grand Haven, Mich	17	16	17	21	n. 76 w.	4
68	Marquette, Mich	31	16	8	23	n. 45 w.	21
69	Port Huron, Mich	24	21	19	13	n. 63 e.	7
70	Sault Ste. Marie, Mich	18	13	22	24	n. 22 w.	5
71	Chicago, Ill	19	22	23	15	s. 69 e.	8
72	Milwaukee, Wis	23	16	22	15	n. 45 e.	10
73	Green Bay, Wis	27	19	13	10	n. 21 e.	8
74	Duluth, Minn	29	6	31	16	n. 79 e.	15
	North Dakota.						
75	Moorhead, Minn	28	13	20	12	n. 28 e.	17
76	Saint Vincent, Minn	23	9	27	17	n. 36 e.	17
77	Bismarck, N. Dak	27	13	27	13	n. 45 e.	20
78	Williston, N. Dak	17	17	24	15	.. .. e.	9
	Upper Mississippi Valley.						
79	Saint Paul, Minn	21	16	21	20	n. 11 e.	5
80	La Crosse, Wis	27	23	9	13	n. 45 w.	6
81	Davenport, Iowa	21	23	10	22	s. 81 w.	12
82	Des Moines, Iowa	24	20	15	16	n. 14 w.	4
83	Dubuque, Iowa	20	20	13	21	.. .. w.	8
84	Keokuk, Iowa	23	24	12	16	s. 76 w.	4
85	Cairo, Ill	20	24	16	15	s. 14 e.	4
86	Springfield, Ill	24	24	9	18	.. .. w.	9
87	Hannibal, Mo	20	18	18	18	n.	2
88	Saint Louis, Mo	19	27	14	13	s. 7 e.	8
	Missouri Valley.						
89	Columbia, Mo	12	11	7	8	n. 45 w.	1
90	Kansas City, Mo	22	26	19	9	s. 68 e.	11
91	Springfield, Mo	19	26	19	8	s. 58 e.	13
92	Omaha, Nebr	20	21	14	15	n. 11 w.	5
93	Valentine, Nebr	24	18	14	18	n. 34 w.	7
94	Sioux City Iowa	26	21	14	12	n. 22 e.	5
95	Pierre, S. Dak	.....	.....	.....	.....	.....	.....
96	Huron, S. Dak	25	18	22	13	n. 52 e.	11
	Northern Slope.						
98	Havre, Mont	16	13	24	23	n. 18 e.	3
99	Miles City, Mont	21	14	25	16	n. 52 e.	11
100	Helena, Mont	13	23	9	36	s. 70 w.	29
101	Rapid City, S. Dak	20	21	16	18	s. 63 w.	2
102	Cheyenne, Wyo	15	22	8	27	s. 70 w.	20
103	Lander, Wyo	15	14	16	29	n. 86 w.	13
105	North Platte, Nebr	14	25	19	17	s. 10 e.	11
	Middle Slope.						
106	Colorado Springs, Colo	33	14	12	12	n.	19
107	Denver, Colo	22	20	10	25	n. 82 w.	15
108	Pikes Peak, Colo	13	20	9	34	s. 74 w.	26
109	Pueblo, Colo	21	9	18	27	n. 37 w.	15
110	Concordia, Kans	16	27	18	6	s. 47 e.	16
111	Dodge City, Kans	17	26	31	5	s. 71 e.	28
112	Wichita, Kans	24	24	21	6	.. .. e.	15
113	Oklahoma, Okla	14	32	18	11	s. 21 e.	19
	Southern Slope.						
114	Abilene, Tex	13	34	23	9	s. 34 e.	25
115	Amarillo, Tex	12	32	15	11	s. 11 e.	20
	Southern Plateau.						
116	El Paso, Tex	15	9	17	32	n. 68 w.	16
117	Santa Fe, N. Mex	12	29	21	19	s. 7 e.	17
118	Tucson, Ariz	10	32	16	25	s. 22 w.	24
119	Yuma, Ariz	12	18	15	30	s. 68 w.	16
	Middle Plateau.						
121	Winnemucca, Nev	20	15	17	22	n. 45 w.	7
122	Salt Lake City, Utah	15	21	20	22	s. 18 w.	6
	Northern Plateau.						
123	Baker City, Oreg	22	20	19	20	n. 27 w.	2
124	Idaho Falls, Idaho	18	32	9	18	s. 33 w.	17
125	Spokane, Wash	10	31	16	19	s. 8 w.	21
126	Walla Walla, Wash	6	31	12	19	s. 16 w.	26
	North Pacific Coast Region.						
127	Fort Canby, Wash	31	10	9	22	n. 31 w.	25
129	Port Angeles, Wash	4	19	13	33	s. 53 w.	25
130	Seattle, Wash	17	19	20	13	s. 74 e.	7
131	Tatoosh Island, Wash	14	18	13	32	s. 78 w.	19
132	Portland, Oreg	36	11	3	24	n. 40 w.	33
133	Roseburg, Oreg	37	6	11	11	n.	31
	Middle Pacific Coast Region.						
134	Eureka, Cal	30	16	7	26	n. 54 w.	24
135	Red Bluff, Cal	24	19	16	25	n. 61 w.	10
136	Sacramento, Cal	16	32	12	21	s. 29 w.	18
137	San Francisco, Cal	1	43	4	34	s. 35 w.	52
	South Pacific Coast Region.						
138	Fresno, Cal	32	6	7	35	n. 47 w.	38
139	Los Angeles, Cal	7	13	15	33	s. 72 w.	19
140	San Diego, Cal	16	15	7	37	n. 88 w.	30

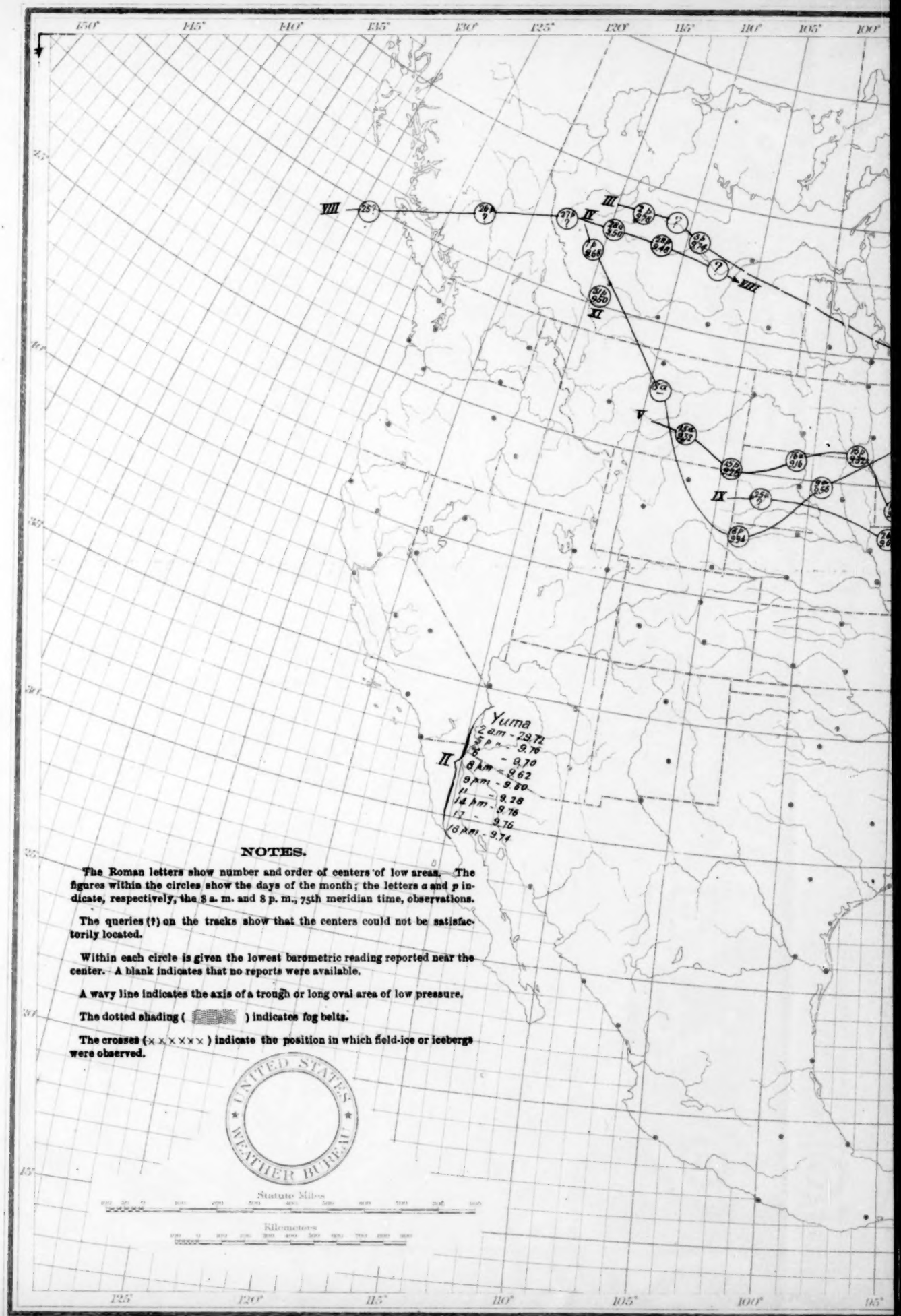
STATE WEATHER SERVICES.

The following table summarizes the more prominent climatological features given in the reports for May by the directors of the respective State Weather Services:

State.	Temperature.											Precipitation.					Director.
	Mean departure.	Maximum.	Date.	Station.	Minimum.	Date.	Station.	Monthly ranges. Greatest.	Station.	Least.	Station.	Mean departure.	Maximum. Amount.	Station.	Minimum. Amount.	Station.	
	°	°			°			°		°		*Inches.*	*Inches*		*Inches*		
Alabama	−2.0	102	18	Union	34	21	Healing Springs	62	Union	34	Carrollton	−1.69	5.92	Newton	0.65	Madison	F. P. Chaffee.
Alaska																	Not yet organized.
Arizona	+2.0	105	7	Parker	25	15	Whipple Barracks.	65	Whipple Barracks.	29	Nogales		0.89	Show Low	0.00	Benson †	W. R. Burrows.
Arkansas	0.0	96	7	Lonoke	35	20	Keesees Ferry †	57	Keesees Ferry †	41	Winslow	−1.50	9.41	Keesees Ferry	0.37	Madding	F. H. Clarke.
California	−0.7	111	6	Salton	18	16	Summit	68	Folsom City	26	Point Reyes Light.	−0.32	5.64	Kennedy G'ld Mine	0.00	Indio a †	J. A. Barwick.
Colorado	−1.8	101	13	Vernon	12	1	Breckenridge	70	Akron †	35	Climax	+0.35	9.00	Gold Hill	0.01	Vernon	G. A. Loveland.
Connecticut	+0.4	89	2	Middletown	31	11	Voluntown	55	Middletown †	39	New London	+1.21	7.58	Waterbury	3.53	New London	J. Warren Smith.
Delaware		91	18	Wilmington	41	29	Newark	48	Seaford †	32	Kirkwood		12.67	Newark	0.56	Seaford	C. P. Cronk.
District of Columbia.																	See Maryland.
Florida	−1.3	98	30	Clermont	44	21	Plant City	52	Plant City	20	Key West	−1.51	6.92	Tampa	0.26	Green Cove Springs	E. R. Demain.
Georgia	−0.5	98	16	Brag †	35	20	Clayton	62	Fleming	41	Macon	−1.08	7.03	Brag	0.53	Piscola	Park Morrill.
Idaho		95	26	Garden Valley	16	2	Atlanta	69	Garden Valley	54	Hailey †		4.14	Murray	0.20	Martin	J. H. Smith.
Illinois	−0.3	96	16	Olney b	30	18	Bloomington	64	Bloomington	44	St. John †	−1.15	5.60	Palestine	0.78	Warsaw	John Craig.
Indiana	0.0	95	*	Vincennes	31	19	Veedersburg †	69	Connersville	46	Jasper	+0.19	7.08	Madison	2.75	Jasper	Prof. H. A. Huston.
Indian Territory																	See Oklahoma.
Iowa	+1.0	96	14	Logan	22	19	Atlantic	69	Logan †	37	Mount Pleasant	−2.28	4.77	Clinton	0.33	Rock Rapids	J. G. Sage.
Kansas	+2.5	101	16	Ulysses	20	19	Hays City	73	Allison	46	Fort Riley †	−1.34	5.16	Eureka Ranch	0.33	Jaqua	T. B. Jennings.
Kentucky	−1.5	99	*	Fords Ferry	32	20	Eubank †	60	Eubank †	41	Eddyville	−0.20	6.23	Eubank	1.86	Fords Ferry	Frank Burke.
Louisiana	+1.1	97	30	Maurepas	38	*	Davis †	55	Maurepas	26	Port Eads	−0.83	5.07	Liberty Hill	0.52	Port Eads	R. E. Kerkam.
Maine	−1.2	91	2	Farmington	30	11	Orono †	60	Farmington	40	Eastport	+1.58	7.44	Cornish	1.09	Fort Kent	J. Warren Smith.
Maryland	+1.6	90	*	Boettcherville †	28	29	Sunnyside	56	Sunnyside	31	Easton	+1.87	10.41	Fallston	2.85	Cherryfield	Dr. W. B. Clark.
Massachusetts	+1.0	91	2	Brockton †	25	15	Ludlow Center	62	Taunton †	32	Woods Holl	+0.23	6.62	Leeds	1.37	East Templeton	J. Warren Smith.
Michigan	−2.4	91	17	Benton Harbor	24	12	Gladwin	59	Olivet †	38	Cheboygan †	+2.27	9.17	Adrian	2.91	Bellaire	E. A. Evans.
Minnesota	+3.2	96	*	Milan	22	4	Marfield	69	Beardsley	42	Lake Vermillion	+0.19	8.54	St. Cloud	0.63	Willmar	E. A. Beals.
Mississippi	+0.2	100	17	Water Valley	34	20	French Camps	60	Vaiden †	32	Stonington	−1.61	6.71	Vicksburg	0.36	Water Valley	R. J. Hyatt.
Missouri	+0.2	95	16	Rea	30	*	Rea †	65	Rea	30	Arthur	−0.75	8.78	Arthur	0.47	Rea	A. E. Hackett.
Montana	+1.0	100	28	Glendive	18	10	Fort Logan	72	Fort Keogh	50	Helena	+0.29	3.84	Cascade	0.46	Red Lodge	J. M. Sherier.
Nebraska	+4.2	105	13	Imperial	22	18	Lexington †	85	Franklin	48	Bratton	−2.90	3.65	Creighton	0.00	Culbertson †	G. E. Hunt.
Nevada	−0.2	95	25	Battle Mountain	16	2	Stofiel	69	Paradise	38	Hot Springs	−0.23	1.86	Lewers Ranch	0.00	St. Clair †	Prof. C. W. Friend.
New Hampshire	−3.5	88	2	Newton †	25	15	Peterboro †	59	Keene †	46	Dublin †	+0.69	5.95	North Conway	2.37	Bethlehem	J. Warren Smith.
New Jersey	+1.2	93	2	Paterson †	30	15	Charlotteburg	60	River Vale	37	Atlantic City	+3.88	15.61	Bridgeton	3.57	Newark a	E. W. McGann.
New Mexico		102	27	Rincon	19	1	Halls Peak	66	Bloomfield †	42	Eddy		3.41	Albert	0.00	Deming †	H. B. Hersey.
New York	+0.8	90	1	Rome	23	15	New Lisbon †	66	Rome	39	New York	+2.10	12.02	Eden Center	2.85	Malone	Prof. E. A. Fuertes.
North Carolina	+0.9	98	18	Falkland	28	20	Highlands †	58	Chapel Hill	21	Hatteras	−0.20	7.51	Raleigh	1.90	Southport	Dr. H. B. Battle.
North Dakota	+1.5	98	30	Portal	23	19	Berlin	72	Berlin	49	St. John †	−0.74	3.15	Williston	0.24	Willow City	B. H. Bronson.
Ohio	+0.4	98	14	Portsmouth	31	29	Rittman *	61	Benton Ridge	41	Ashland	−0.55	9.25	Bucyrus	2.05	Orangeville	L. N. Bonham.
Oklahoma	+4.0	98	28	Kemp	30	12	Gwenndale	62	Pond Creek †	46	Winnview	−3.20	5.55	Buffalo	0.79	Burnett	J. I. Widmeyer.
Oregon	−0.5	95	*	Detroit †	9	1	Burns	70	Canyon City †	38	Langlois	−0.14	4.01	Crook	0.28	Joseph †	Hon. H. Hayes.
Pennsylvania	+1.6	92	1	Hollidaysburg	27	15	Dyberry	62	Hollidaysburg	42	Harrisburg	+4.79	15.02	Quakertown	2.72	Elwood Junction †	W. P. Tatham.
Rhode Island	+2.1	91	2	Pawtucket	35	15	Kingston	53	Pawtucket	34	Block Island	+0.43	5.07	Providence c	3.36	Block Island	J. Warren Smith.
South Carolina	−0.3	98	17	Greenwood	38	20	Greenwood	60	Greenwood	38	Port Royal	−0.37	6.48	St. Stephens	1.20	Trenton	J. W. Bauer.
South Dakota	+4.4	105	15	Tyndall	23	26	Britton	77	Forestburg	54	Fort Meade	−2.52	3.85	Fort Meade	0.12	Faulkton	S. W. Glenn.
Tennessee	+0.5	94	*	Hohenwald †	34	20	Knoxville †	56	Knoxville †	41	Savannah	−0.49	6.28	Covington b	0.90	Tullahoma	J. B. Marbury.
Texas	+1.0	106	7	Midland	30	5	Fort Hancock	71	Fort Hancock	25	Corpus Christi	+0.13	11.67	Graham	0.00	Sierra Blanca †	D. D. Bryan.
Utah		98	7	St. George	10	*	Scofield †	78	Scofield	41	Manti		1.22	Salt Lake City	0.00	St. George	G. N. Salisbury.
Vermont	−1.2	88	1	Woodstock	24	15	Hartland	62	Woodstock	40	Burlington	+0.90	5.07	Irasburg	2.32	Cornwall	J. Warren Smith.
Virginia		98	18	Richmond	30	29	Hot Springs	61	Petersburg	42	Hampton		8.11	Stephens City	2.31	Wytheville	Dr. E. A. Craighill.
Washington	−1.8	98	24	Kennewick	22	9	Hunters	72	Moxee Valley	34	Fort Canby	−0.01	4.98	Stillaguamish	0.21	Kennewick	H. F. Alciatore.
West Virginia		100	10	Nuttallburg	28	29	Raleigh	68	Nuttallburg	40	Pleasant Hill		9.40	Martinsburg	2.18	Cloverdale	H. W. Richardson.
Wisconsin	0.0	92	15	Prairie du Chien	24	19	Hayward †	65	Estella	46	Green Bay	+1.50	10.56	Menomonie	2.51	Cadiz	S. C. Emery.
Wyoming	+0.9	90	14	Lusk	14	10	Big Horn Ranch	68	Camp Pilot Butte	53	Lander	−0.80	3.18	Sundance	0.00	Wheatland	E. M. Ravenscraft.

*Two or more days.

† At other points in the State.



NOTES.

The Roman letters show number and order of centers of low areas. The figures within the circles show the days of the month; the letters *a* and *p* indicate, respectively, the 8 a. m. and 8 p. m., 75th meridian time, observations.

The queries (?) on the tracks show that the centers could not be satisfactorily located.

Within each circle is given the lowest barometric reading reported near the center. A blank indicates that no reports were available.

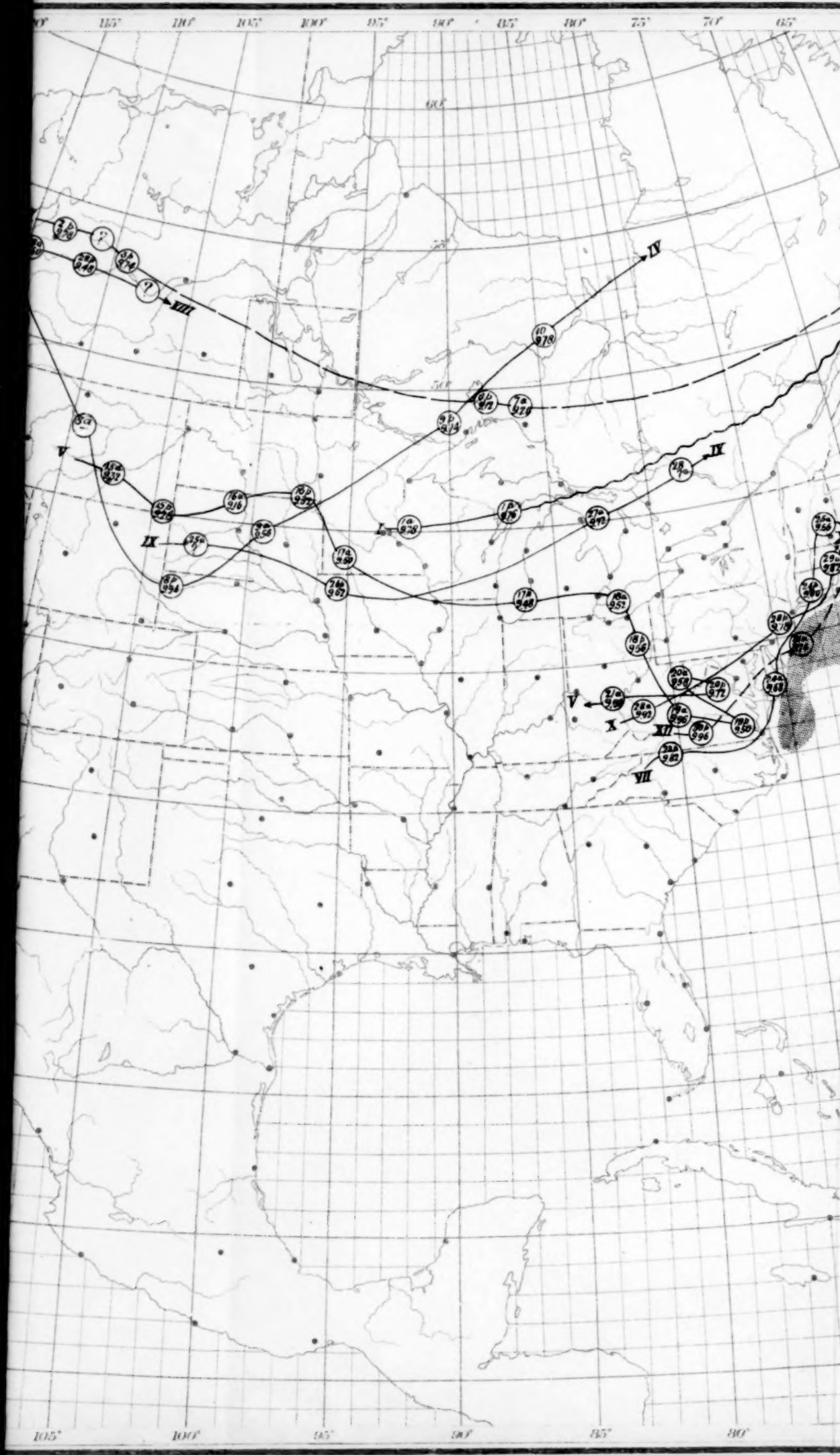
A wavy line indicates the axis of a trough or long oval area of low pressure.

The dotted shading ( ) indicates fog belts.

The crosses (× × × × × ×) indicate the position in which field-ice or icebergs were observed.

UNITED STATES WEATHER BUREAU

Chart I. Tracks of Centers of Low Areas. May, 1894.



65°
60°
55°
50°
45°
40°
35°
30°
25°
20°
15°
75°
70°
65°
60°
24
23
22
21
20
19
18
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
I
II
III
IV
V
VI
VII
VIII
IX
X
XI
XII
G
H

Chart II. Isobars, Isotherms, and Resultant Winds, May, 1894.

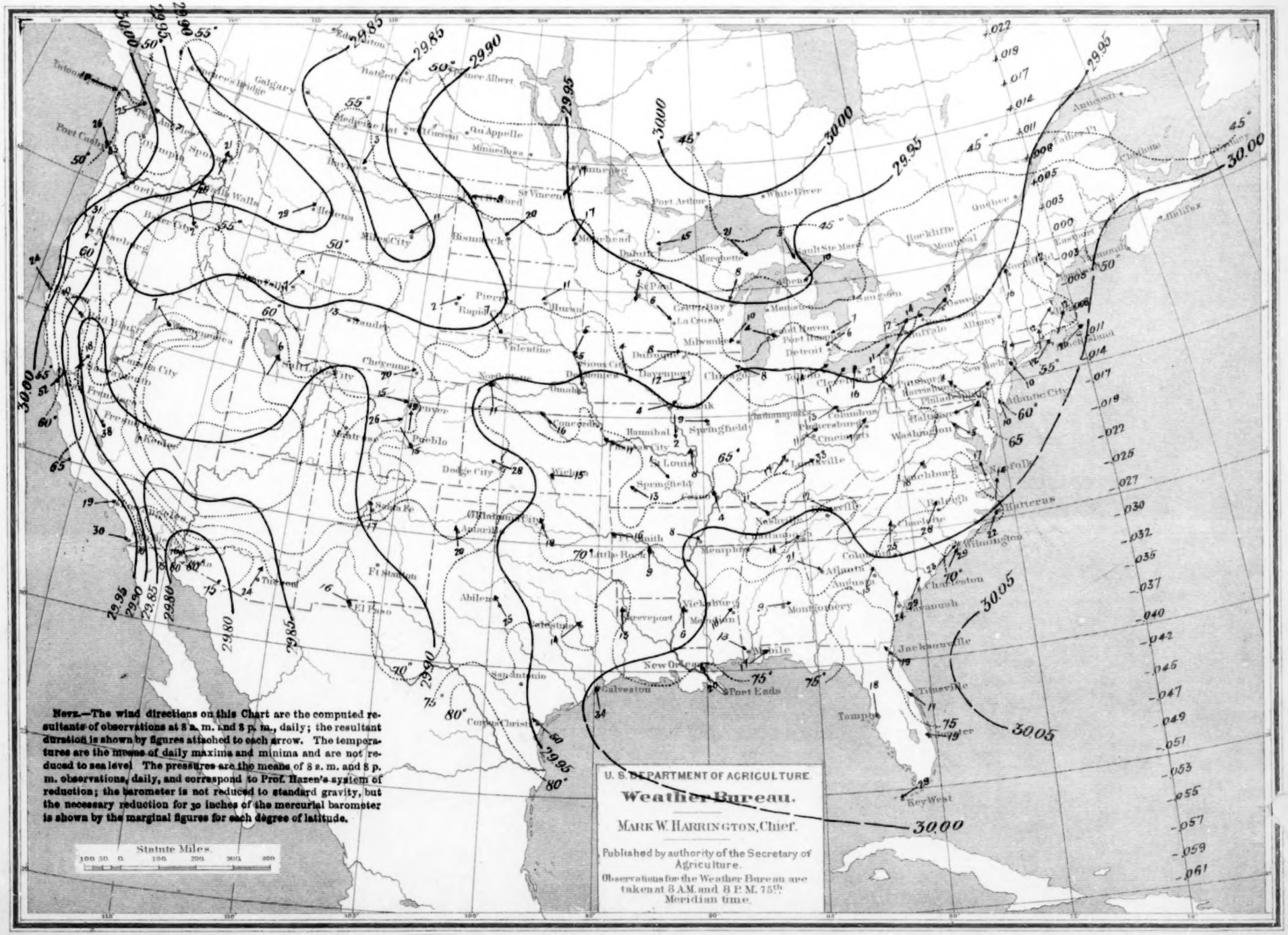

Note.—The wind directions on this Chart are the computed resultants of observations at 8 a. m. and 8 p. m., daily; the resultant duration is shown by figures attached to each arrow. The temperatures are the means of daily maxima and minima and are not reduced to sea level. The pressures are the means of 8 a. m. and 8 p. m. observations, daily, and correspond to Prof. Hazen's system of reduction; the barometer is not reduced to standard gravity, but the necessary reduction for 30 inches of the mercurial barometer is shown by the marginal figures for each degree of latitude.
Statute Miles.
100 50 0 100 200 300 400
U. S. DEPARTMENT OF AGRICULTURE.
Weather Bureau.
MARK W. HARRINGTON, Chief.
Published by authority of the Secretary of Agriculture.
Observations for the Weather Bureau are taken at 8 A.M. and 8 P.M. 75th Meridian time.

Chart III. Total Precipitation. May, 1894.

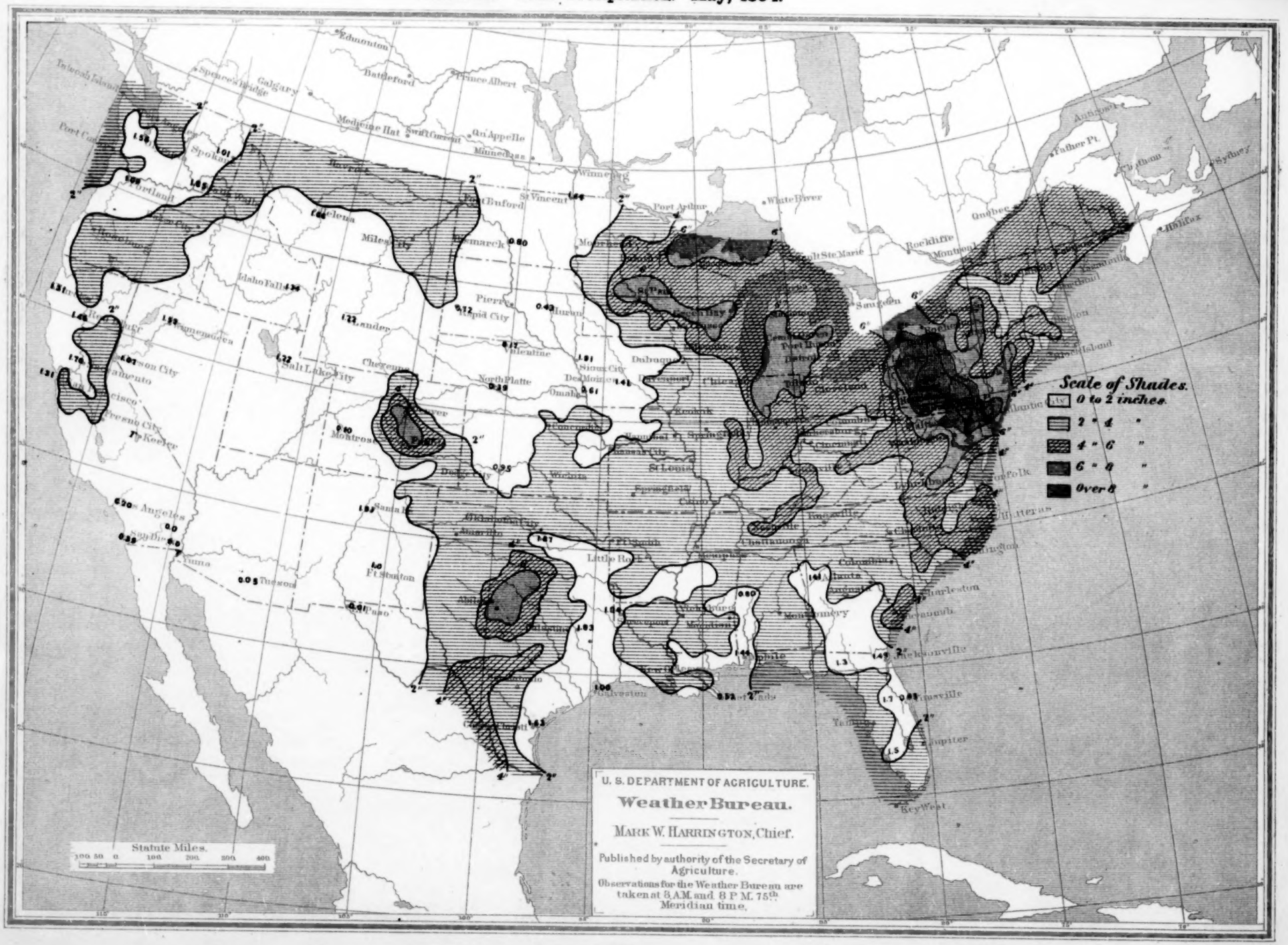
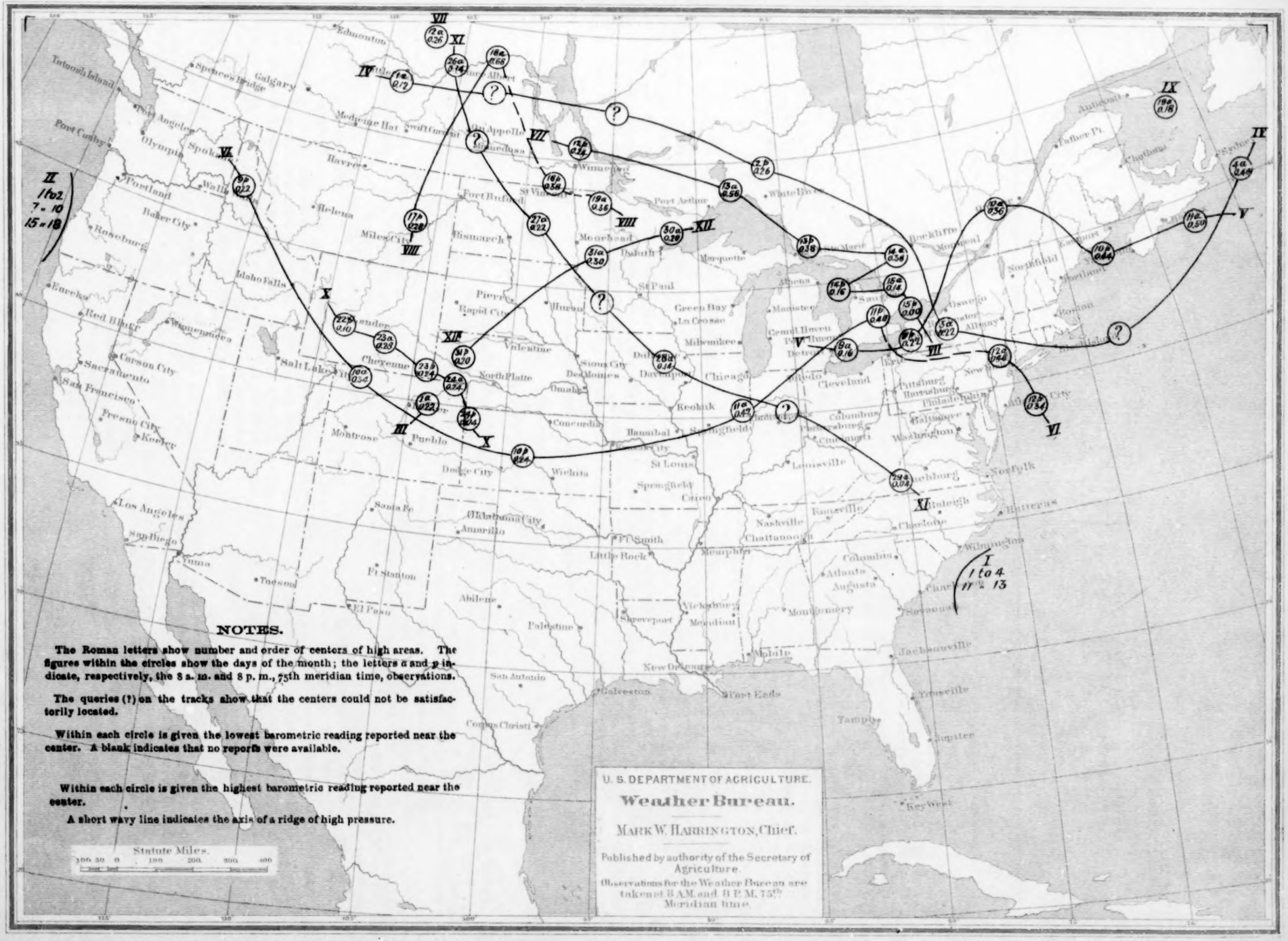

Scale of Shades.
0 to 2 inches.
2 " 4 "
4 " 6 "
6 " 8 "
Over 8 "
Statute Miles.
100 50 0 100 200 300 400
U. S. DEPARTMENT OF AGRICULTURE.
Weather Bureau.
MARK W. HARRINGTON, Chief.
Published by authority of the Secretary of Agriculture.
Observations for the Weather Bureau are taken at 8 A.M. and 8 P.M. 75th Meridian time.

Chart IV. Tracks of Centers of High Areas. May, 1904.

Chart IV. Tracks of Centers of High Areas. May, 1894.


NOTES.
The Roman letters show number and order of centers of high areas. The figures within the circles show the days of the month; the letters a and p indicate, respectively, the 8 a. m. and 8 p. m., 75th meridian time, observations.
The queries (?) on the tracks show that the centers could not be satisfactorily located.
Within each circle is given the lowest barometric reading reported near the center. A blank indicates that no reports were available.
Within each circle is given the highest barometric reading reported near the center.
A short wavy line indicates the axis of a ridge of high pressure.
Statute Miles.
100 50 0 100 200 300 400
U. S. DEPARTMENT OF AGRICULTURE.
Weather Bureau.
MARK W. HARRINGTON, Chief.
Published by authority of the Secretary of Agriculture.
Observations for the Weather Bureau are taken at 8 A.M. and 8 P.M. 75th Meridian time.
II 1 to 2 7 to 10 15 to 18
I 1 to 4 11 to 13